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PULMONARY TUBERCULOSIS: THE ADELAIDE "HEALTH SURVEY".[1]

By D. R. W. COWAN, M.B., B.S., F.R.A.C.P.,
Adelaide.

THE primary purpose of this meeting is to discuss the plan initiated by the civic authorities of Adelaide for a health survey of 30,000 school children by mass miniature radiography. The Australian and New Zealand Association of Radiologists has stated its considered opinion that such a plan is valueless, and it hopes that public money will not be wasted on it. In order that members of this Branch may be fully acquainted with the facts and be in a position to form an independent judgement, it is necessary that a full and frank discussion shall take place. If occasionally one may have to hit hard to drive home a fact, it must be realized that no motive of personal animus enters into the matter. Perhaps I may quote from a broadcast remark of Mr. Menzies: "If truth is to emerge and in the long run be triumphant, the process of free debate, the untrammelled clash of opinion, must go on." I shall attempt to place before members, for calm and dispassionate consideration, the reasons for my objection to the scheme, and I shall make a few remarks on the control of tuberculosis in general.

In the latter part of 1940 a system was introduced, under which every young woman who is desirous of undertaking the course of training necessary to qualify her for registration by the Nurses' Board of South Australia, is required to undergo a special examination to ascertain whether her lungs are sound. The particular object is to detect evidence of tuberculosis; but other abnormal conditions of the respiratory tract are noted, and also of the heart and thorax generally. A similar examination is made of all recruits for the Police Force, and of many university students, particularly medical, physical education and massage students. This work has been done at the chest clinic of the Royal Adelaide Hospital, and the present time seems opportune for a review of the results up to date. The nurses at the Royal Adelaide Hospital are kept under continuous observation with the cooperation of Dr. Rollison, the medical superintendent, whose willing help and keen interest are greatly appreciated. All nurses who enter that institution for their training are fully investigated at the start, and are kept under continuous survey until they leave. It is not possible at present to keep such a close watch on nurses in other institutions.

The routine method adopted in these examinations is to take a careful history, including present state of health, past illness, and history of tuberculosis in the family or known contact. A Mantoux test is carried out; 0·1 cubic centimetre of a 1/1,000 dilution of Old Tuberculin of the Commonwealth Serum Laboratories is used. In case of doubt, a second test is carried out with a 1/100 dilution. All nurses are radiologically examined, whether or not they react to the Mantoux test. This is done in these special groups for the reason that most of the persons concerned are almost sure to be exposed to infection sooner or later. Many of those who fail to react to the Mantoux test later do so, and it is desired to have a film taken in the "negative" stage as a basis for comparison if and when they become "positive". A routine X-ray examination is made every year. In the case of those who fail to react to the Mantoux test, the test is repeated every three months. An X-ray examination is made as soon as the fact of sensitization is established. In this way a considerable number of cases has been collected in which X-ray films of the chest taken before and after infection has occurred are available. It is remarkable in what a large proportion of such cases no change of any sort can be detected in the "before" and "after" skiagrams. It is hardly likely that in all these cases infection has occurred through the tonsil or the digestive tract or in any other way than through the lungs. But if it occurred

[1] Read at a meeting of the South Australian Branch of the British Medical Association on July 30, 1942.

through the lungs, the fact cannot be demonstrated by any method of examination, either clinical or radiological. It would seem possible that the primary focus in the lung may be so small or so soft as to be incapable of demonstration by radiography, even by the best methods. Far be it from me to decry the value of the radiograph in the diagnosis of early tuberculosis; but obviously the method has its limitations. Here is a collection of radiographs[1] of the chests of nurses and students who have changed from the "Mantoux negative" to the "Mantoux positive" state, and in whom the fact of recent infection has thus been demonstrated; but the X-ray film gives no evidence of this whatsoever. Only one case will be discussed, but this is typical of the group.

A young resident medical officer was tested and radiologically examined in the middle of May of this year. As on previous occasions, the Mantoux test produced no reaction and the X-ray film revealed no abnormality in the lungs. He was posted to duty in Frome Ward, a special ward for the care of consumptives, for that month. During that time he suffered from an influenzal cold, and was off duty for a few days. But he completed the month. In the middle of June he reported that he did not feel well. The Mantoux test was repeated, and produced a very strong reaction with vesication. But the X-ray picture which was taken then revealed no change whatsoever from the previous one. He was sent off duty to take care of himself for two months; at the end of this time he will be investigated again.

The great majority of nurses who sustain a recent infection say they feel perfectly well, and the X-ray film of the chest still reveals no abnormality. But the same procedure is adopted; they go home for two months and are not allowed to return to duty until it seems reasonably clear that the infection is well resisted. In this way it is hoped to overcome the infection in its early stages before the advent of clinically demonstrable disease. Subjects in whose lungs actual changes can be demonstrated are put to bed and given a course of gold therapy, or other suitable measures are taken. Originally we did not take much notice of the fact that infection had been incurred in the case of nurses who seemed well, when the X-ray film failed to reveal any abnormality. They were allowed to return to duty, with instructions to report at once if they did not feel well. But in several cases in which this method was employed, evidence of disease occurred within a few months, and it was decided to institute the routine of two months' rest and general care. Since this has been done, no further calamities have occurred. It is too early yet to say whether this measure alone will be effective. If it is shown not to be so, further measures will be adopted. Unfortunately, there is no infallible method of overcoming infection even in this early stage.

In an effort to safeguard the health of our nurses, a rule was adopted that no probationer was to nurse in Frome Ward unless she was well, reacted to the Mantoux test, and had no radiologically obvious abnormalities in her lungs. This, of course, is in conformity with the ideas gleaned from the experiences of Heimbeck at Oslo. We could not get enough probationers to satisfy these requirements, so it was decided to appoint a special staff of nurse attendants. These were more mature women, aged from thirty-five to forty-five years, who satisfied the same requirements. The arrangement worked well until the shortage of labour became acute. Our staff of nurse attendants became depleted, and it was hard to replace them. In our difficulty we took a chance and appointed two women, aged about forty years, who seemed well, but who failed to react to the Mantoux test. Within three months one developed *erythema nodosum* and the Mantoux test produced a reaction. But the X-ray film of the lungs revealed no change! This undoubtedly was a case of active tuberculosis, but no evidence at all of this fact was given by the X-ray picture. An exactly similar thing happened to one of our medical students, after he had been "clerking" for three weeks in Frome Ward. When a complaint was made a few years ago concerning the employment at the Morris Hospital (a home mainly for patients with the disease in the advanced stages) of young women with little or no previous nursing experience, the then inspector-general of hospitals made out a long report, which seemed to imply that such a place was the safest in the world for young women to undertake nursing duties. I hope we have progressed a little in our ideas since that time.

Here are X-ray films of two young graduates who originally failed to react to the Mantoux test and had radiologically normal lungs, then reacted to the Mantoux test although X-ray examination revealed no abnormality; within a year they were rejected for military service on account of X-ray films in which apical opacities were revealed, which had not been present before. It is intriguing to know what these lesions are; it is possible that they are primary foci, healing by fibrosis or calcification. If this is so, then the primary focus in its early stages was so small or so soft that it could not be demonstrated by radiography; and it must be remembered that only the full size X-ray film was used in this series of examinations. It is possible that this sort of thing occurs frequently, and accounts for the large number in this series who become "Mantoux positive" with no evidence of disease in the lungs. It is possible also that the primary focus resolves completely, and leaves no permanent change of any sort. The subsequent clinical course of the nurses under discussion will be watched with interest, to see whether evidence of lesions develop later.

I wish to present the results of a survey of 1,363 apparently healthy young adults, of an average age of about twenty years. I do not want to burden you unduly with figures, so I shall combine all the different groups and present them as a whole.

Total examined	1,363
Reactors to the Mantoux test	437 (32%)
Total abnormalities	124 (9%)
Tuberculous	50 (3·6%)
Non-tuberculous	74 (5·4%)
Tuberculosis—	
Probably active	6 (0·45%)
Probably inactive	44 (3%)
Other abnormalities—	
Heart conditions	7
Increased markings	33
Ribs and spine	12
Azygos vein sulcus	1
Miscellaneous	21

Perhaps we may dispose of the "other abnormalities" first.

Heart conditions accounted for seven subjects, the usual finding being slight enlargement. None of these subjects showed any clinical evidence of disease. In the whole series only one case of valvular disease was noted; the lesion was mitral stenosis following an attack of rheumatic fever. In this case the radiologist did not comment on the shape or size of the heart. The X-ray film is of little value in the diagnosis of heart disease.

"Increased markings" accounted for 33 subjects. In nearly all of these cases there was a history of catarrh or repeated colds, and in many there was evidence of changes in the antra, either allergic or infective in origin. Most of these subjects failed to react to the Mantoux test.

"Abnormalities of ribs or spine" accounted for twelve subjects. These comprised cervical ribs, congenital abnormalities, old fractures and an occasional scoliosis.

There was one case of "azygos vein sulcus".

A "miscellaneous" group accounted for 21 cases, and this merits further consideration. In all of these cases the radiologist reported indefinite shadows that might be due to tuberculosis. In not one case in this group did the Mantoux test produce a reaction, and in most cases the test was repeated with 1/100 dilution. I do not believe that any of these subjects was suffering from tuberculosis. Some of them appeared to have nothing wrong; others seemed to be suffering from post-influenzal conditions or pneumonitis. I shall demonstrate one or two films that are typical of this group.

A young woman, aged twenty-five years, appeared to be in perfect health, and had had no previous illness of any importance. The Mantoux test failed to produce a reaction,

[1] Dr. Cowan illustrated his remarks with a number of skiagrams.

even to 1/100 dilution. The radiological report was as follows: "There are soft opacities above both clavicles, probably intra-pulmonary, and may suggest an early active lesion." She returned to duty, and was examined again three months later. The Mantoux test still failed to produce a reaction to 1/100 dilution, and the radiologist in his report stated that there was no abnormality in the lungs.

Here is a case in which the radiologist reported "calcareous glands in both lung roots". This subject was a girl, aged nineteen years, who seemed quite well; the Mantoux test has now been carried out nine times without any sign of reaction.

I suspect that the radiologist was guessing, and guessed badly. The radiologist may recognize gross changes; but how he is going to give an opinion on minor changes in root shadows in children is beyond my comprehension. Mental harm will be caused to many people if radiologists are encouraged to indulge in wild guessing.

Here is a case in which a calcified primary focus at the apex, with calcification in the root glands, might be safely diagnosed. How many like this will be found in children? And even if they are found, of what practical importance is the finding.

Of the subjects who failed to react to the Mantoux test in this series, three appeared to have calcified lesions that might reasonably have been ascribed to healed tuberculosis. American workers at the Henry Phipps Institute and elsewhere have shown that as many as 10% of persons who have completely overcome their tuberculous infection, and have calcified lesions, ultimately become anergic. These three are probably instances of this phenomenon. No other of the subjects who failed to react to the Mantoux test showed lesions of any particular importance from the public health point of view.

Of the subjects who reacted to the Mantoux test, fifty showed evidence of tuberculosis past or present; only six of these showed evidence of an active lesion. Not one of these was proved by bacteriological examination to have an "open" lesion.

To sum up the results in this series, we find that of 1,363 apparently healthy young adults, only six showed evidence of lesions of real significance from the public health point of view. These were probably suffering from active tuberculosis, and all responded well to treatment. Not one case of "open" infectious tuberculosis was found. The discovery of other abnormalities, such as healed tuberculous lesions, increased lung markings, enlarged hearts, cervical ribs *et cetera* is interesting, but of no practical value. In view of these findings in young adults, it is pertinent to ask: "What do the Town Hall authorities expect to find in school children?"

I would especially draw your attention to the list of cases in which the fact of recent infection has been demonstrated by a change from the "Mantoux negative" to the "Mantoux positive" state: 133 such cases have been collected among nurses and medical students. In only four of them was any change noted in the X-ray film taken after infection occurred, as compared with that taken before.

Here is a subject who showed radiological evidence of disease in the lung. This young woman, aged nineteen years, had four times failed to react to the Mantoux test; on the fifth occasion a positive result was obtained. The X-ray picture taken before infection occurred revealed no abnormality. The X-ray picture taken after infection had occurred revealed a soft opacity above the left clavicle, which had not been there before. This cannot be looked upon as other than a tuberculous lesion, and presumably a primary focus. The girl has been away from duty for four months and has had general treatment. She now seems to be well, her blood sedimentation rate is normal, and she will be allowed to return to duty, though the apical shadow has not altered.

Contrast that case with this one, in which a young man, aged seventeen years, was sent for radiological examination because of unexplained loss of weight. The X-ray film revealed a soft opacity below the right clavicle. Quite rightly the radiologist suggested that it might be a tuberculous lesion. The parents' anguish was allayed when, as a result of the boy's failure to react to the Mantoux test, I expressed the opinion that the lesion was not tuberculous in origin. The family went to the seaside for a month, and the boy had a good rest. On his return he still failed to react to the Mantoux test, and the X-ray film taken by the same radiologist revealed no abnormality. The radiologist, after some weeks' delay, arrived at the same decision as that which the physician was able to make at once, and thereby save everyone concerned from further mental upset.

Radiography is by no means a reliable method of demonstrating the fact that a person has been infected with the tubercle bacillus; it can only reveal evidence of changes in the lungs due to disease. It cannot with any degree of certainty say what is the nature of the lesion or whether it is active or not. Most radiologists, I think, will agree that their function is to give as much help as possible to the surgeon or to the physician in the diagnosis and treatment of disease; they should not be expected to assume the rôle of principal actors.

I am satisfied that nothing of importance would have been overlooked in this survey if reliance had been placed on a careful history, a Mantoux test, and an X-ray examination of only those who reacted to the test. The civic authorities propose to survey school children by mass miniature radiography; their position is entirely untenable. So far as tuberculosis is concerned, the two great danger periods are infancy and early and middle adult life. Statistical evidence shows that infants under the age of two years resist infection badly; in something like 10% of such cases dissemination occurs and the children die of tuberculous meningitis. Then there is a gap of many years in which tuberculosis is of relatively little importance. This comprises roughly the school years. Then comes the period from about twenty to forty years, when the ordinary type of adult tuberculosis occurs. It is remarkable that the civic authorities should have selected for their survey the group in which little of importance is likely to be found.

A quotation from a letter in the *British Medical Journal* of April 25, 1942, is not inapplicable.

> Mass radiography of children leaving school would appear, in view of their age group and the comparative rarity of active pulmonary tubercle at that age, to be without value in public health.

Most of us, I feel, will agree with this view.

I am doubtful whether a survey of school children for tuberculosis, even by reliable methods, is worth while. Of infinitely greater value would be a compulsory examination of young adults in the twenty to forty years age group. But no slipshod methods should be tolerated.

Perhaps I may be excused for showing this film. The report said: "Healed and calcified lesion at the left apex." But the patient was coughing up sputum containing tubercle bacilli. Clinical evidence must never be neglected. There is a tendency to exalt the X-ray examination to altogether too high a place in the diagnosis of respiratory disease. There is more than a little truth in the old saying that a good history is half the diagnosis, and this holds good even in tuberculosis, in which we know the onset is so often insidious.

I saw recently a man who had been accepted by the Army as fit for active service. After full examination, including radiography, this man joined the Australian Imperial Force. His record at the chest clinic showed that he had had four attacks of pleurisy in the preceding two years.

Of course he lied in giving his history to the examining officers. But what of the X-ray film? Did it lie, or merely mislead?

Another subject, a man, aged twenty-six years, was typical of numbers I see at the chest clinic. The history was one of catarrh with persistent cough of several months' duration. The Mantoux test produced no reaction. The X-ray film of the chest revealed no abnormality. There was evidence of sinus infection.

I am rather surprised that any competent radiologist, knowing the hazardous nature of the responsibilities involved, will undertake the task of giving an opinion concerning children on the X-ray findings alone, especially when miniature radiography is used. I have no doubt that

the film will demonstrate some lesions; but I am concerned at what it will miss. Probably the commonest respiratory troubles in children are the bronchial affections, and these will almost invariably be missed by the X-ray examination. If the object of the survey is to detect evidence of tuberculosis, the first step is to perform a tuberculin test. Naturally, all those who react to the test need further investigation, and naturally, an attempt should be made to ascertain whence the infection came. In this way no case of infection is likely to be missed and no case of the disease to be overlooked, and many unsuspected foci of infection in adults will be found. The other abnormalities that may be found by an X-ray survey alone are not likely to be of any practical importance whatsoever from a public health point of view. A good history will lead to the recognition of the bronchial affections. Is this beyond the capabilities of the school medical service? The Lord Mayor says that the Town Hall scheme is neither a diagnostic service nor a tuberculosis survey. It would puzzle anyone to know what it is. It was announced as a plan to detect traces of early tuberculosis. Now it is goodness knows what. In the Press it is alluded to as a "health survey". Surely it must be a new idea to most of us, to base a health survey on a radiological examination of the chest! The Lord Mayor says that the Eagle Chambers establishment is not a diagnostic service. But he asked that a branch of the chest clinic be established there, with full diagnostic equipment. In my opinion it would be the height of folly to duplicate the facilities which already exist at the Royal Adelaide Hospital and at the Adelaide Children's Hospital. If it was proposed to establish centres at Port Adelaide or Port Pirie or Mount Gambier, that would be reasonable. To establish another centre in Adelaide at the present juncture would be nonsensical. The chest clinic has reason to be proud of the service it gives to patients referred to it and to the practitioners who refer them; it has no desire to depart from the high standard of work it has achieved. Its association with the children's hospital is a happy and harmonious one, with the result that effective work is being done by both. It is strange that the civic authority should fail to realize how essential it is for success in public health work to have the willing cooperation and support of medical practitioners generally. It is stranger still that it should persist with its scheme despite a solid mass of responsible medical opinion opposed to it. I make no apology if I appear scathing concerning the Town Hall plan. I believe it to be intrinsically unsound, and a waste of public money. And there is a worse feature still; it may actually do harm, in that parents, as a result of a "normal" report, may fail to seek proper medical advice for abnormalities that need attention and will be overlooked in this mass survey. I refer especially to bronchial affections, so often associated with upper respiratory tract infection. At the chest clinic we see more patients suffering from a chronic cough associated with sinus infection than we do patients with active tuberculosis, and in most of these cases the X-ray examination reveals no abnormality at all in the lungs. It is the history that puts us on the right track. At the risk of repetition, I should like to elaborate this theme a little more.

Here are records of two army cases. The first is that of a delicate boy, aged about twenty years. He has had a cough since he was two years old. He had a double antrostomy at the age of fourteen years. He had a profuse hæmoptysis in 1940. Twice he was called up for examination, and rejected. On the third occasion he was accepted, and he is now in camp. I have not filled his bronchial tubes with lipiodol; but I am convinced he has bronchiectasis, and is not fit for military duties. He was doing a useful job where he was, and should have been left there. The X-ray picture reveals nothing more than slight increase of basal markings. There is no reaction to the Mantoux test.

The other case is that of a man, about thirty-five years old, whom I was astounded to see in an Australian Imperial Force uniform. As a boy he had pneumonia eight times. Tuberculosis was eliminated as a cause by a skin test and a radiological examination of his chest. When I last saw him, about five years ago, I realized that he had grossly infected antra. This opinion was confirmed by the specialist to whom I sent him. Owing to worries and financial difficulties, he neglected to have his antra attended to. He lied his way into the army. I cannot blame the radiologist, for there is little to be seen in the X-ray films. Now this man has returned from the Middle East, decrepit, with a chronic cough, and crippled with rheumatism—a sorry-looking soldier indeed. The army will do exactly the same thing with the first boy if it does not take care.

In one week at the chest clinic I saw three children, aged about ten years. Their mothers told almost identical stories of cough since infancy, repeated colds and bronchitis *et cetera*. They had all been told by their doctors: "There is nothing to worry about, the child will grow out of it." In each case X-ray examination revealed no abnormality in the chest, and the Mantoux test produced no reaction. Each child had antral infection. The simple fact is that these children will not "grow out of it"; they will "grow into it", and will probably end with chronic bronchitis or bronchiectasis unless their upper air passages are attended to. It is the history in these cases that indicates the necessity for further investigation; not the X-ray film, which reveals no abnormality. Such cases will all be missed in the Town Hall survey, and possibly irreparable harm will be done to some children from the fact that the receipt of a report of normality will allay the fears of the parents, with the result that necessary treatment may be neglected.

Here is the record of a young woman who, following an attack of measles at the age of four years, suffered from recurring bronchitis. When she was eighteen years old asthma began, and now she is having adrenaline three times a day. The X-ray film of the chest reveals no abnormality, and the Mantoux test produces no reaction. She has infected antra, but no one has bothered to investigate her upper air passages. Of what use in diagnosis is the X-ray film of the chest in this case?

It is interesting to note the progressive deterioration that is occurring in the method of these surveys. A few years ago Dr. Wunderly's survey comprised the taking of a history, the performance of a Mantoux test, and an X-ray examination on fifteen inch by twelve inch film of all reactors. This was acclaimed a successful survey. The army relied upon the taking of a history (unfortunately often not a reliable one), a physical examination, and an X-ray examination by the "micro" method, followed by the taking of a seventeen inch by fourteen inch film in all doubtful cases. The civic authorities relied on a history (quite a scrappy one), with the taking of a 35 millimetre X-ray film of the chest. In their survey of school children they have dispensed with a history and rely on the taking of a 35 millimetre X-ray film. And this is called a "health survey"! Why not send for Allum, or gaze at the stars? It would be just about as useful. A "health survey" on the lines proposed by the civic authorities is utterly unsound on medical grounds, and it is likely to be of little if any value from a public health standpoint.

The real object of any tuberculosis survey is to find the people with "open", infectious lesions, those who can spread the disease to others. It is well known that "open" pulmonary tuberculosis is a rare disease in childhood. This is the least fertile field to find infective persons. If it is proposed to attempt to trace the infection back from the children to the source, surely it is sense to find all the children who have been infected, and work back from them, rather than from those only who show radiological evidence of disease. It is for this reason that it is so necessary to insist that a tuberculin test is indispensable in a survey of children for tuberculosis. In this collection of radiographs of nurses and students who have been radiologically examined when they were "Mantoux negative" and again soon after they have become "Mantoux positive", in almost all the cases the X-ray pictures taken before and after infection has occurred are precisely the same. These young people have been infected, the frontiers have been crossed, and this may be the beginning of a life-long struggle against tuberculosis for many of them. The fact that they have been infected can be ascertained by a simple skin test; the X-ray film cannot give this

information. Would anyone say that it is of no consequence that they have been infected? Surely in the control of tuberculosis, the first thing is to prevent the spread of infection. If this ideal cannot at once be attained, surely the next thing to do is to ascertain at the earliest possible moment the fact that infection has occurred, and try to eliminate that infection before changes due to actual disease have arisen. Patients with "open" lesions must, of course, be found, and they must, of course, be treated effectively. But they will not be found in any considerable numbers among school children, if at all. If the suggestion was to make a mass survey of people over the age of twenty years or thereabouts by miniature radiography, and to use that method as a screen to detect persons who needed further investigation, then probably no one would object very much. But to use it for school children surely is wrong. I am informed that the scheme is designed to educate the people on the necessity for periodical medical examination. I approve any sound educational measure; but this is not sound. It is distinctly unsound, and it will do harm if it puts into the minds of the people, as it is doing, the idea that an X-ray examination of the chest is the only thing necessary in a health survey. A few years ago I did my utmost to persuade the University of Adelaide to establish a health clinic which would have been a complete diagnostic service and a valuable research effort—and incidentally, it would have provided a home for the Branch. But the medical profession viewed the matter coldly, and it was shelved. If the Town Hall scheme is intended as a work of pure research, then I say that this is not the time for such a thing, when civilian practitioners are almost "snowed under" with other and more important duties. In any case, this form of research has been carried out over and over again, and the results are not likely to differ materially here from those obtained in other countries.

I have endeavoured to place clearly before you my reasons for considering the plan initiated by the civic authorities for a health survey of school children to be unsound on medical grounds, and likely to be of little if any value from the public health standpoint. It is left to members to say whether or not they think my views are correct.

THE X-RAY HEALTH SURVEY CONDUCTED BY THE ADELAIDE LOCAL BOARD OF HEALTH, WITH A REPORT ON THE FIRST 10,048 ATTENDANCES.

By H. K. Fry,
Adelaide.

The Adelaide Local Board of Health organized a "health week" from October 1 to 7, 1941, one of the features of which was a health exposition in the Adelaide Town Hall. When an X-ray firm, at the instigation of an Adelaide specialist in diseases of the chest, offered to exhibit the apparatus for taking 35 millimetre photographs of the chest and to supply technicians to operate the plant during Health Week, the Local Board of Health decided to make the trial of a chest survey.

Two radiologists and a physician volunteered to form a viewing committee, and nursing and clerical staffs were provided by the enthusiastic cooperation of the Voluntary Aid Detachment and Voluntary Service Detachment organizations. Although otherwise no charge was made for exhibitors and visitors, it was decided to charge a fee of half-a-crown for each X-ray examination, in order to provide a nucleus fund for any future survey work, though there was no expectation at the time that the Adelaide Local Board of Health would undertake this task. About 3,000 visitors to the exposition were radiologically examined, and many hundreds of applicants had to be refused, as all available time was booked. This remarkable public response was a great encouragement towards establishing a permanent survey, and a nucleus fund of about £300 was in hand.

As a result of experience gained, it was possible to present a proposal to the Health Committee of the Adelaide Local Board of Health for the establishment of a permanent survey. The Health Committee recommended the proposal to the Board, and it was adopted. A committee was appointed to manage the survey, the members to be the Lord Mayor, the Chairman of the Health Committee of the Local Board of Health, the Secretary to the Local Board of Health, the City Treasurer, the Medical Officer of Health, and two radiologists and a physician (to be appointed). After public advertisement, Dr. J. S. Verco, Dr. H. A. McCoy and Dr. H. W. Wunderly were appointed to these positions, and joined the committee. Mr. C. H. Marshall was appointed as technician, and a salaried staff of four Voluntary Aids was engaged for nursing and clerical duties. Later a trained nurse was added to the staff, taking the place of a Voluntary Aid.

The organization adopted is similar to that employed during Health Week. Each applicant fills in a form giving personal data and any history of previous illness that he or she is prepared to volunteer. This form is surrendered in exchange for an identification slip when the applicant's name is entered on a nominal roll. The nominal roll determines for each applicant an identification number, comprising the photographic spool number and a serial number. This number is marked within a date stamp on the applicant's form, on the identification slip and on a record card, and is photographed on the X-ray film. Data from the application form are typed on the record card. The developed films are projected by a lantern, and read by a viewing committee composed of a radiologist and a physician. A film showing no significant abnormality is recorded as "pass" on the nominal roll, a significant abnormality is recorded as "report" on the nominal roll, and the report itself is typed on the record card. The appropriate one of three rubber stamps is applied to the application form, and this form is returned to the applicant on presentation of his or her identification slip. The three stamps respectively bear the following legends:

X-ray reveals no abnormality.

X-ray reveals an abnormality. You are recommended to see your own Doctor to whom further information can be given.

Film not satisfactory. Please bring this form with you for a second X-ray.

Results.

The permanent Health Survey opened on November 3, 1941. The attendances at the survey have been good, but not quite up to expectation. The serious nature of recent war events has been to a great extent responsible for this. A number of children from State schools and colleges have come for examination and the survey has cooperated with the Commonwealth authorities in the examination of applicants for munition work and national labour. The Press has given valuable support in bringing the survey prominently to public notice. An endeavour has been made to encourage those who attend the survey to make their visits an annual routine measure.

The films taken by Mr. Marshall have been of excellent quality. The technical factors vary; 75 to 100 milliamperes at 75 to 95 kilovolts peak have been used, and the exposure has ranged from one-twentieth of a second for small children to one-quarter of a second for heavy adults; the distance has invariably been 36 inches.

During March, 1942, the 10,000th record was made, those of Health Week being included. The data have been analysed and are presented in Tables I, II, III and IV. Actually 10,048 subjects are dealt with, 4,618 being males and 5,480 females.

Reports of abnormalities were made with the interests of the applicants in view, and were almost entirely restricted to such conditions as were deemed to require further investigation. Many instances of past pleurisy, calcified healed primary complex, minor abnormalities of the lungs, heart and aorta, and both minor and exaggerated degrees of scoliosis were ignored.

Reports of abnormalities were made in regard to 344 males and 302 females; these figures respectively represent

Table I.

Age Group and Sex.	Total Number in Groups.	Probable Pulmonary Tuberculosis.	Possible Pulmonary Tuberculosis.	Probably Healed Pulmonary Tuberculosis.	Past Pleurisy.	Other Lung Conditions.	Heart Abnormalities.	Other Abnormalities of the Chest.	Spinal Abnormalities.	Total Abnormalities.	Percentage of Total Abnormalities.	Percentage of Probable and Possible Pulmonary Tuberculosis.
0 to 4. Males	40	—	—	—	—	—	—	—	—	—	0	0
Females	33	—	—	—	—	1	—	—	—	1	3·0	0
5 to 9. Males	298	—	—	—	—	1	—	—	—	1	0·3	0
Females	250	1	3	1	1	2	2	1	—	11	4·8	1·7
10 to 14. Males	803	2	4	—	—	4	—	3	—	13	1·6	0·75
Females	645	3	4	2	—	5	1	—	1	16	2·5	1·1
15 to 19. Males	597	9	2	4	—	4	1	—	—	21	3·5	2·0
Females	830	4	6	3	1	6	2	1	1	24	2·9	1·2
20 to 24. Males	264	2	2	1	—	2	1	3	—	12	4·5	1·9
Females	880	11	6	4	—	4	—	—	—	25	2·9	2·0
25 to 29. Males	459	7	7	6	1	4	—	1	—	26	5·7	3·0
Females	630	5	7	5	—	8	—	—	1	26	4·1	1·9
30 to 34. Males	453	17	7	8	—	6	2	2	—	42	9·2	5·3
Females	521	11	9	3	1	4	2	3	—	33	6·3	3·8
35 to 39. Males	481	14	11	9	2	3	—	1	—	40	8·3	5·2
Females	446	16	8	3	—	6	2	3	—	38	8·5	5·4
40 to 44. Males	345	11	6	7	—	4	1	1	1	31	9·0	4·9
Females	369	12	5	3	1	7	4	—	—	33	8·9	4·6
45 to 49. Males	262	15	9	3	3	1	2	1	—	40	15·3	9·2
Females	275	4	4	4	—	1	3	1	1	18	6·5	2·9
50 to 54. Males	211	10	6	6	1	1	3	5	—	32	15·1	7·6
Females	202	6	7	5	—	3	1	4	—	26	12·9	6·4
55 to 59. Males	167	14	5	2	—	5	—	4	—	30	18·0	11·4
Females	150	4	1	4	—	1	2	1	—	13	8·7	3·3
60 to 64. Males	83	10	3	1	2	6	1	2	—	25	30·1	15·7
Females	95	2	2	5	—	4	2	2	—	17	17·9	4·2
65 to 69. Males	62	7	4	3	—	1	—	1	—	16	25·8	17·7
Females	42	1	1	2	—	1	1	—	—	6	14·3	4·8
70 to 79. Males	50	3	2	1	—	2	—	2	—	10	20·0	10·0
Females	43	1	—	2	—	3	3	4	1	14	32·6	2·3
80 to 90. Males	5	—	—	—	—	—	—	—	1	1	20·0	0
Females	3	—	—	—	—	—	—	—	—	—	0	0
No age given. Males	38	3	—	—	—	1	—	—	—	4	10·5	7·9
Females	50	—	—	—	—	1	—	—	—	1	2·0	0
All ages. Males	4,818	124	70	51	9	51	10	27	2	344	7·4	4·2
Females	5,430	81	63	46	4	57	25	21	5	302	5·5	2·6
Total	10,048	205	133	97	13	108	35	48	7	646	6·4	3·4

Table II.

Analysis of Cases giving History of Possibly Significant Illness.

Age Group and Sex.	Total Number in Groups.	Total Abnormalities.	Percentage of Abnormalities.
0 to 4. Males	25	—	0
Females	22	1	4·5
5 to 9. Males	177	1	0·6
Females	127	8	6·3
10 to 14. Males	369	8	2·2
Females	333	8	2·4
15 to 19. Males	204	15	7·3
Females	290	12	4·6
20 to 24. Males	79	8	10·1
Females	186	10	5·4
25 to 29. Males	112	11	9·8
Females	153	18	11·7
30 to 34. Males	141	26	18·4
Females	148	14	9·4
35 to 39. Males	132	23	17·4
Females	136	19	14·0
40 to 44. Males	117	15	12·8
Females	125	21	16·8
45 to 49. Males	102	26	25·4
Females	88	9	10·2
50 to 54. Males	71	18	25·3
Females	70	20	28·4
55 to 59. Males	66	12	18·2
Females	65	9	13·9
60 to 64. Males	45	15	33·3
Females	45	14	31·1
65 to 69. Males	33	6	18·2
Females	26	3	11·5
70 to 79. Males	21	5	24·3
Females	18	10	55·5
80 to 90. Males	3	—	0
Females	—	—	0
No age given. Males	4	2	50·0
Females	6	1	16·7
All ages. Males	1,701	191	11·2
Females	1,814	177	9·8
Total	3,515	368	10·5

Table III.

Analysis of Cases giving no History of any Possibly Significant Illness.

Age Group and Sex.	Total Number in Groups.	Total Abnormalities.	Percentage of Abnormalities.
0 to 4. Males	15	—	0
Females	11	—	0
5 to 9. Males	121	—	0
Females	103	3	2·9
10 to 14. Males	434	5	1·15
Females	312	8	2·6
15 to 19. Males	393	6	1·5
Females	576	12	2·1
20 to 24. Males	185	4	2·2
Females	674	15	2·2
25 to 29. Males	347	15	4·3
Females	477	8	1·7
30 to 34. Males	312	16	5·1
Females	373	19	5·1
35 to 39. Males	349	17	4·9
Females	310	19	6·14
40 to 44. Males	228	16	7·0
Females	244	12	4·9
45 to 49. Males	160	14	8·7
Females	187	9	4·8
50 to 54. Males	140	14	10·0
Females	126	6	4·7
55 to 59. Males	101	18	17·8
Females	85	4	4·7
60 to 64. Males	38	10	26·4
Females	50	3	6·0
65 to 69. Males	29	10	34·5
Females	16	3	18·7
70 to 79. Males	29	5	17·3
Females	25	4	16·0
80 to 90. Males	2	1	50·0
Females	3	—	0
No ages given. Males	34	2	5·9
Females	44	—	0
All ages. Males	2,917	153	5·2
Females	3,616	125	3·5
Total	6,533	278	4·3

TABLE IV.

Possibly Significant Histories of Illness in Relation to Reported Abnormalities.

Age Group and Sex.	Pulmonary Tuberculosis.	Whooping Cough.	Pneumonia.	Pneumonia and Pleurisy.	Pleurisy.	Continual Colds, Bronchitis or Asthma.	Heart Disease.	Other Complaints.	Total.
0 to 4. Males	—	—	—	—	—	—	—	—	—
Females	—	1	—	—	—	—	—	—	1
5 to 9. Males	—	—	1	—	—	—	—	—	1
Females	—	1	1	—	—	4	—	2	8
10 to 14. Males	—	3	4	—	—	1	—	—	8
Females	—	4	2	—	—	2	—	—	8
15 to 19. Males	—	3	2	—	1	2	—	7	15
Females	—	1	3	—	3	3	1	1	12
20 to 24. Males	—	—	4	—	1	1	—	2	8
Females	3	1	1	—	2	2	—	1	10
25 to 29. Males	1	1	5	—	1	—	—	3	11
Females	1	1	4	4	3	3	—	2	18
30 to 34. Males	1	—	4	2	10	4	—	5	26
Females	1	—	—	1	4	5	—	3	14
35 to 39. Males	5	—	—	3	8	4	—	3	23
Females	5	—	1	2	7	2	1	1	19
40 to 44. Males	3	—	2	—	5	2	—	3	15
Females	4	—	—	3	6	3	—	5	21
45 to 49. Males	1	—	7	4	5	3	—	6	26
Females	1	—	1	1	—	2	1	3	9
50 to 54. Males	2	—	4	—	2	4	3	3	18
Females	—	—	3	1	7	4	—	5	20
55 to 59. Males	1	—	3	1	2	—	1	4	12
Females	1	—	—	1	1	2	2	2	9
60 to 64. Males	—	—	2	1	7	1	—	4	15
Females	—	—	3	2	3	4	2	—	14
65 to 69. Males	—	—	1	1	—	4	—	—	6
Females	—	—	—	—	2	—	—	1	3
70 to 79. Males	—	—	1	—	1	1	1	1	5
Females	—	—	1	1	2	5	—	1	10
80 to 90. Males	—	—	—	—	—	—	—	—	—
Females	—	—	—	—	—	—	—	—	—
No age given. Males	1	—	—	—	—	—	—	1	2
Females	—	—	—	1	—	—	—	—	1
All ages. Males	15	7	40	12	37	33	5	42	191
Females	16	9	21	17	40	41	7	26	177
Total	31	16	61	29	77	74	12	68	368

7·4% and 5·5% of those who attended, and they total 646 abnormalities and 6·4% of attendances. Details of the distribution of these abnormalities in age and sex groups are given in Table I and illustrated in Figure I. The results were a great surprise, as the expected high incidence of tuberculous lesions among young females is not represented, and the high incidence of possibly active tuberculosis among males of the later age groups is a feature of great significance. "Other Lung Conditions", in Table I, chiefly include areas of pneumonitis due to recent respiratory infections, several instances of probable syphilis and at least two instances of probable hydatid cyst. "Other Chest Conditions", in Table I, include fractured ribs, foreign bodies, abnormalities of the mediastinum and displacement of the diaphragm apart from adhesions.

A survey dependent upon voluntary attendance cannot be expected to represent a true cross-section of the community, as the facilities of the survey are more likely to appeal especially to those who are suspicious of their health. An attempt to overcome this loading of the data was made by the separation of all those who gave some history of possibly significant illness from those who did not do so. These figures are given in Tables II and III and illustrated in Figure II. Many persons have withheld

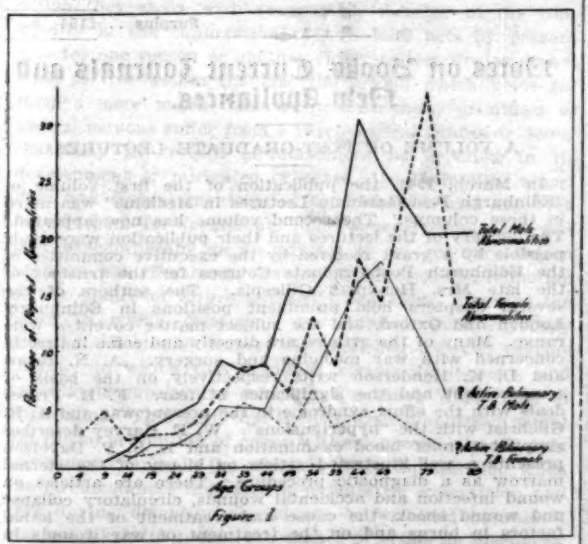

Figure I

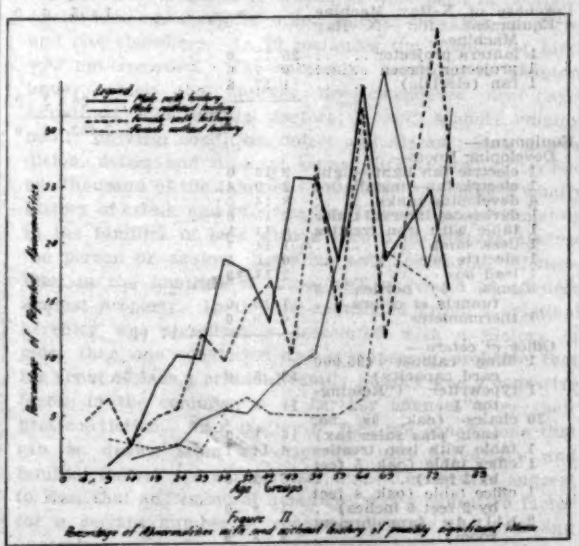

Figure II

information, and the results of Table III are probably loaded by the inclusion of a more than representative number of persons with abnormalities. The results do reveal, however, a significant relation of abnormalities to history of illness in the age groups up to middle age.

An analysis is presented in Table IV of the types of previous illness in the 368 reported cases in which such a history was given. The term "Other Complaints" chiefly includes influenza, rheumatism and chest injuries.

Amongst those subjects whose X-ray films were passed without report were (i) 42 giving a history of tuberculosis, (ii) 512 giving a history of pleurisy, or pneumonia and pleurisy, (iii) 2,542 giving a history of other chest complaints and (iv) 51 giving a history of "heart trouble".

Many medical practitioners have sought and received the report of the radiologists concerning their patients. The Health Survey does not carry out any follow-up work, as this is the natural field of the Chest Clinic and of private medical practitioners. Well-organized team work will be necessary to make the best use of the investigational work of the survey.

A financial statment prepared by the City Treasurer, Mr. F. L. Stone, is given in the appendix. The expense of X-ray tube replacement (£80) has not had to be met up to the present time.

The outstanding result of the survey has been the demonstration of the high proportion of elderly males who show radiographic evidence of advanced plumonary tuberculosis. Undoubtedly these persons must be largely responsible for keeping up the infection of the oncoming generation. These men usually consider that they are in good health, or that they are suffering from "catarrh" or "bronchitis" only, and have had no knowledge of any need to take effective precautions.

Acknowledgement.

Acknowledgement is made to the Adelaide Local Board of Health for permission to publish this report.

APPENDIX A.

X-Ray Health Survey as at March 26, 1942.

Equipment et cetera and Office Alterations.

	£ s. d.	£ s. d.	£ s. d.
Purchase of X-Ray Machine			1,455 6 0
Equipment for X-Ray Machine—			
1 lantern projector	25 17 0		
1 projector screen	0 7 6		
1 fan (electric)	1 17 6		
			28 2 0
			1,483 8 0
Equipment—			
Developing Room—			
1 electric fan light—tight	9 10 0		
1 electric fan—installation	2 2 6		
4 developing tanks	8 14 0		
1 darkroom interval timer	2 15 0		
1 table with iron trestles	4 14 1		
1 desk lamp	1 14 7		
1 electric jug	0 16 1		
1 lead box	2 17 2		
2 jugs, 6 bottles, 2 funnels *et cetera*	1 15 0		
1 thermometer	0 9 6		
		34 17 11	
Office *et cetera*—			
1 filing cabinet (25,000 card capacity)	13 5 0		
1 typewriter ("Remington")	11 0 0		
30 chairs (oak, 9s. 9d. each, *plus* sales tax)	16 1 9		
1 table with iron trestles	4 14 1		
1 office table (oak, 5 feet by 3 feet)	5 12 6		
1 office table (oak, 4 feet by 2 feet 6 inches)	3 5 0		
2 blinds (appointment room)	2 8 9		
		56 10 1	
General—			
48 gowns (blue, at 8s. 6d. each)	20 8 0		
10 curtains (blue, at 4s. 11d. each)	2 9 2		
1 blood-counting chamber	3 11 6		
1 electric iron	1 5 1		
		27 13 9	
			119 1 9

	£ s. d.	£ s. d.	£ s. d.
Alterations to Rooms and Electrical Alterations—			
Office Renovations—			
Labour	93 1 11		
Materials	61 6 4		
Re-surfacing floors	25 12 6		
Lead screens	7 0 0		
Brass plates	4 13 6		
Bell	2 7 6		
	194 1 9		
Electrical Alterations—			
Installing X-Ray machine	£34 15 0		
Alterations to light and power	3 15 0		
Installing light (dark room)	1 12 6		
Installing light and power plug	3 6 0		
	43 8 6		
			237 10 3
Total expenditure			£1,840 0 0
Authorized expenditure		£1,500 0 0	
Plus surplus from Health Week survey		317 18 7	
			1,817 18 7
Excess expenditure			£22 1 5

APPENDIX B.

X-Ray Health Survey.

Statement of Receipts and Expenditure, November 3, 1941, to March 26, 1942 (20⅔ Weeks).

	£ s. d.	£ s. d.
Revenue—		
Actual receipts	872 16 0	
Outstanding fees	56 17 6	
		929 13 6
Expenditure—		
Salaries (including fees to radiologists and physician)	490 0 1	
Rent of rooms	59 11 9	
Lighting and power (estimate)	7 10 0	
Materials and Sundry Charges—		
Films	£55 13 0	
Materials for film developing *et cetera*	13 0 6	
Materials and charges	17 11 5	
Printing	44 10 8	
Petty cash	1 15 6	
Telephones	3 10 0	
	136 1 1	
Depreciation—		
£1,840 at 7½% for five months	57 10 0	
Interest on outlay—		
£1,500 at 4% for five months	25 0 0	
		775 12 11
Surplus		£154 0 7

Notes on Books, Current Journals and New Appliances.

A VOLUME OF POST-GRADUATE LECTURES.

In March, 1941, the publication of the first volume of "Edinburgh Post-Graduate Lectures in Medicine" was noted in these columns. The second volume has now appeared.[1] The delivery of the lectures and their publication were made possible by a grant received by the executive committee of the Edinburgh Post-Graduate Courses for the trustees of the late Mrs. Honyman Gillespie. The authors of the several chapters hold prominent positions in Edinburgh, London and Oxford, and the subject matter covers a wide range. Many of the articles are directly and some indirectly concerned with war medicine and surgery. A. N. Bruce and D. K. Henderson write respectively on the basis of temperament and the significance of fear. F. R. Fraser deals with the effort syndrome in the present war and A. R. Gilchrist with the "hypertensions". W. F. Harvey describes simplification of blood examination and L. S. P. Davidson presents a well-illustrated article on biopsy of the sternal marrow as a diagnostic procedure. There are articles on wound infection and accidental wounds, circulatory collapse and wound shock, the cause and treatment of the lethal factors in burns and on the treatment of war wounds in France in May and June, 1940. Of more general interest are articles on modern methods of treating lung tuberculosis, the action of drugs on the human uterus, and the physiological approach to medical problems. This is a book which any medical practitioner will be glad to possess.

[1] "Edinburgh Post-Graduate Lectures in Medicine", Volume II, 1940-1941, by various authors; 1942. Edinburgh: Oliver and Boyd, Limited; 9¼" x 6¼", with illustrations. Price: 12s. 6d. net.

The Medical Journal of Australia

SATURDAY, OCTOBER 17, 1942.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

THE ADOLESCENT CRIMINAL.

In June, 1939, a good deal of space was devoted in these pages to the discussion of a report from the Home Office, London, by W. Norwood East and W. H. de B. Hubert on the psychological treatment of crime. On that occasion medical practitioners were reminded of the double interest which they can claim in the prevention of crime—the first which they share with every other member of the community in the suppression of antisocial acts by persons who for one reason or another either cannot live or do not wish to live within the law, the second which holds for them a more urgent interest because many criminals or asocial persons suffer from a psychological illness or defect that may in certain circumstances be arrested in its development or mitigated or cured. In their 1939 report East and Hubert investigated 406 prisoners and approved 214 of them for treatment. The general conclusion was that psychotherapy as an adjunct to an ordinary prison sentence was effective in the prevention or in the reduction of the chance of future antisocial behaviour, provided the cases in which treatment was applied were carefully selected. East and Hubert distinguished between psychotherapy to which they assigned certain limitations, and psychiatric supervision which had a much wider field of application. They held that the psychiatric approach might aid in the prevention of crime without necessarily effecting any moral change in the offender. They thought that when the circumstances indicated it psychiatric supervision and care during detention should not be withheld because it was not likely to reduce the chance of crime on discharge. They were also insistent that valuable results might be obtained from study of the hereditary and environmental causes of crime and from investigation of the special disorder of behaviour found among criminals. They suggested that a special institution should be created for the care, study and treatment of a selected group of criminals.

W. Norwood East has now published in a book of some 340 pages[1] the results of an important study undertaken "to elucidate, if possible, some of the causal factors which contribute towards adolescent criminality". Four thousand lads were studied during the period 1930 to 1937. They were to a certain extent a selected group—they were taken from London and surrounding areas (in order that their homes could be visited and their relatives interviewed) and they were all adolescents. At the same time within these limits they represented four thousand consecutive cases received from the courts. The inquiries made in each instance were designed to produce as comprehensive a picture as possible of the lad's history and environment. East explains in the preface of the book that it is the purpose of the scientist to explore and explain and the duty of the physician to comfort and cure. He has undertaken this study in the spirit of the scientist-physician who sets out to examine with cold precision a limited number of facts and circumstances in order to apply to the common good such of his findings as are useful. We would therefore point out that preventive medicine experts and also those whose interests lie in the realms of social medicine will find in this book much food for thought.

Though it will be impossible in the available space to give a detailed description of the investigation with statistical facts, it must be pointed out that of the 4,000 lads, 3,622 had been convicted of offences against property, but not of sexual or person offences; 132 had been convicted of offences against the person, but not of sexual offences; 125 had been convicted of sexual offences and 121 of offences against discipline. The numbers at ages sixteen, seventeen, eighteen, nineteen and twenty years were respectively 498, 917, 960, 904 and 721. About 56% of the whole group were first offenders. Of the 4,000 lads, 3,913 were born in England or Wales, 14 were born in Scotland, 18 in Ireland, seven in other English-speaking countries and one elsewhere. In 29 instances the country of birth was not recorded. The successive headings or chapters under which the findings are considered deal with hereditary and familial factors; home; school; employment; physical condition, defect and disease; mental condition, defect and disease; personality traits. Fifty-two per thousand of the families of the lads presented a family history of crime, and this was less frequent proportionately in the families of lads with a record of offences against the person or against discipline only, or sexual offences, than in the families of those with a record of offences against property. In the last-mentioned group a criminal heredity was significantly associated with a history of more than one conviction and it appeared probable that for about 60 lads a criminal family history was a causative factor in the commission of further offences after their first conviction. As a matter of fact the conclusions that can be drawn from investigation into hereditary and familial factors are surprisingly few. The figures suggest to East that an "immoral heredity" was a causative factor for a certain number of convictions after the first and quarrelsomeness in the father may have been also a causative factor in a few cases. East cannot conclude

[1] "The Adolescent Criminal: A Medico-Sociological Study of 4,000 Male Adolescents", by W. Norwood East, M.D. (London), F.R.C.P. (London), in collaboration with Percy Stocks, M.A., M.D., B.Ch., D.P.H. (Cambridge), and H. T. P. Young, M.B., Ch.B. (Edinburgh), with foreword by Sir Alexander Maxwell, K.C.B., K.B.E.; 1942. London: J. and A. Churchill Limited. Crown 4to, pp. 340 with 112 tables. Price: 45s. net.

from the available data to what extent, if any, lads are deterred from committing crime by witnessing the penalties imposed upon their parents who have committed legal offences, or by the physical and mental suffering which may result from immorality, or by the aversion and disgust aroused by the conduct of an ill-tempered and contentious parent. He is, however, insistent that the data do emphasize the need for research in the fundamental problems of inheritance. Certain forms of mental disorder are common causal factors of criminal conduct in men and women of various ages. Since current opinion accepts the importance of the hereditary factor in the reproduction of these disorders, their eugenic importance cannot be denied. When society is so highly developed that the teachings of eugenists are heeded, dysgenic unions may possibly be prevented. One curious fact noted was that when cardiac or pulmonary disease was present in the father, it might act as a deterrent and sometimes prevent the commission of a second offence. East resists the "tempting conclusion" that the lads who do not commit a second offence in these circumstances refrain because they realize their economic value in the home of a disabled parent. In regard to other diseases investigated no other significant fact emerged from the association with crime.

The home, as the centre of family life, is, we are reminded, a social unit and national character is largely founded on it. While the home environment undoubtedly influences character and conduct, it is also true that character and conduct may bring about a change in the environment. East points out that the "effectiveness" of home life on a lad is largely due to its early incidence and its continuous action. He adds that the weight of parental authority should be measured by the ready cooperation it is able to exact as well as by the moral force behind it. Here is material for lengthy elaboration and argument. That home life may have a beneficial effect will be generally conceded; and it is not surprising to find that the beneficial effect was shown by the fact that among lads who had never been in a training establishment there was "a significant negative association between a history of unbroken residence with the parents and the number of previous convictions". On the other hand there was "an excessive frequency of past convictions in lads who had lived independently, with their employer, or away from home". It is suggested that other factors besides home influence were concerned in the production of this association. There was evidence that the absence of one or both parents, and especially the father, when the lads were fourteen years of age and after, tended to be associated with the commission of multiple offences against property or the person. An important observation is that different judicial, administrative and disciplinary methods of treating adolescent offenders do not always take into account the fact that the result of any form of treatment depends upon the nature of the person controlled as well as upon the kind of control exercised. In illustration of this it is pointed out that in the largest crime group lads under lax, careless or repressive control, and those who were intolerant of apparently judicious control, had a greater tendency to repeat criminal offences than lads under other types of control. Other facts noted were that lads generally became more amenable to control as age advanced, and that "the average size of the family when the lads were fourteen years of age was considerably larger than would be found at the present time in a random sample of young adults from the population as a whole". East points out that this observation confirms those of other investigators; its significance, however, is not clear, and the investigation gives no ground for concluding that the position in the family is a crimogenic factor of importance. He states that among the lads without any record of a sexual offence a history of multiple convictions was significantly associated with residence in a poor class district. Among those who had such a record there was a significant negative association. There was no significant variation in the mean number of rooms in the dwelling according to the ages of the lads or the nature of their offences. Neither was there a significant association between the number of inhabitants in the dwelling and the number of previous convictions. The sexual offence group, however, had a significantly smaller number of inhabitants per dwelling than other groups. East is very cautious about drawing conclusions from these observations. He admits on the one hand that his findings emphasize the importance of family contacts, since life in the small family herd is a preparation for the wider requirements of the national herd, and the cult of the ancestor and family tradition favours acceptable social conduct and national stability. On the other hand his findings suggest to him that the reactions of adolescents to home conditions are far from being simple or stereotyped and require further elucidation. Thus we are faced with the rather disheartening conclusion that although social legislation may remove what is generally adverse in the homes of the people, we cannot at present be sure that the betterment will materially reduce the amount of adolescent crime.

In regard to environmental factors at school we find that the lads investigated were in the main average scholars, their social failure being for the most part attributable to their inept emotional reactions and faulty ethical standards. "The custodial care of adolescent offenders therefore concerns itself with both the training to the fullest scope of their individuality in the needs of life, and a full recognition of the claims and needs of society." This statement, of course, opens up the question of the teaching given in ordinary elementary schools in relation to the mental needs of children, a subject which at the moment can merely be mentioned. In regard to employment the general inference is that although the convicted lads had not experienced more than the average amount of unemployment, they were much more liable to commit offences during that period than at other times. In other words the prevention of unemployment may prevent many lads from committing offences. The figures also showed that attributes which determine a lad to commit multiple offences sometimes favour his earning capacity. This we are told is probably connected with the fact that initiative, aggressiveness and selfishness are qualities which bring some people success, others into prominence, and still others before a criminal court. With this most people will agree, and many will add the remark that if people got their deserts the three categories would prove to be by no means mutually exclusive.

Turning to physical and mental defect and disease to which reference must be short we note the conclusion that the association of rapidity of growth and frequency of crime is worthy of further study. "It suggests that the

added physiological stress which accompanies the active phase of growth may produce adverse psychological impacts." As would be expected, the proportion of lads who were mentally defective was very much higher than would be expected in a random sample of lads from the general population. Clearly if the mentally defective were certified and segregated this cause of criminality among adolescents would be largely eliminated. East states that ascertainment of mental defect is sometimes inadequate. Many defectives are, of course, recognized as such while they are in prison. The proportion of lads who were or had been insane was considerably less than the proportion who were mentally defective. East goes on to discuss insanity, epilepsy and psychoneurosis and rightly insists that the findings emphasize once more the necessity for accurate and early mental diagnosis in the prevention of crime.

From this short outline it will be clear that East's investigations have covered an enormous field; it is also clear that he cannot reach finality. When we think of crime and criminals we have to consider the environment of the so-called criminal and to remember that he can seldom be held responsible for the surroundings in which he finds himself. We have to remember that the offender is the product of many bygone generations, whose members in their turn have probably had to contend with an adverse environment, and that "in the emotional crises of life the individual remains true to type, unchanging and unchanged throughout the ages". We have also to pay some attention to the society which sets up certain standards of rectitude and declares that all who transgress those standards are criminals. The days have passed when offenders against society laws were shut up in revenge or merely that they might be punished for their transgressions. Possibly there are still some who hold views of this kind. It is the role of medicine to be the evangelist of the better doctrine, the doctrine of rehabilitation and the recovery of self-respect. Medicine clamours for the mental appraisement of offenders against the social code of law, but as we have tried to show this is only one aspect of the subject. East has shown that in regard to the crime of adolescents further research is needed and that this research must go beyond the region of mental disease. For example, even as the study of sexual perversions has thrown much light upon sexual offences, so a closer study of instinctive activities and perversions in other directions of conduct associated with crime is overdue. The whole subject should claim the attention not only of those who practise psychiatry and of those whose interests lie in preventive and social medicine, but also of those who have any thought for the future of the race and the welfare of their brother men.

Current Comment.

ASTHMA AND THE USE OF MORPHINE.

An acute attack of asthma does not as a rule present very great difficulty to the attendant medical practitioner. The exhibition of adrenaline or ephedrine may usually be relied upon to give the patient relief. Adrenaline has the great advantage of quick action, but unfortunately it cannot be given by mouth and its action is of short duration. Occasionally repeated use of adrenaline may give rise to a certain degree of tolerance. Bray, however, states that in the majority of cases successively smaller doses will bring about the desired effect until finally a constant optimal dosage is attained. He also reports that no evidence of bad effect of the drug could be determined when a patient took about two hundred ounces of adrenaline hypodermically and had forty to sixty injections in twenty-four hours. The action of ephedrine is more delayed than that of adrenaline, but it is more prolonged; ephedrine is as a rule not so useful as adrenaline in a severe attack. Bray states that it is of use only in mild cases or as a preventive. In regard to morphine opinions are divided. A search through various text-books will show that some authors regard it as useful when an attack has been prolonged and other remedies have been ineffective; others fail to mention it; others, again, advise against its use. In Coca, Walzer and Thommen's book on asthma and hay fever it is stated that experience has shown that morphine is a valuable drug for controlling a severe asthmatic paroxysm when other measures have failed. At the same time the drug must be used, it is held, "only as a last resort in asthma, for its frequent repetition may lead to the development of a drug habit". This is the view held by many medical practitioners. Many of those with a large experience in the treatment of asthmatic patients find that a hypodermic injection of morphine will sometimes, particularly in a long drawn out attack, give relief that can be obtained in no other way. They regard the use of morphine, however, as something which must be avoided if possible and of which the patient must not know more than is necessary. Under the title "Death from Asthma: A Warning", Warren T. Vaughan and W. Randolph Graham have recently reported several deaths of asthmatic persons after the administration of morphine.[1] Though this report will not bear most critical examination, it is useful as a reminder that care must be exercised in the administration of morphine to asthmatics. All the deaths reported did not follow the use of morphine, but when the drug appeared to be responsible the dose varied from one-sixteenth of a grain to one-quarter of a grain; in one instance the dose is not stated. The deaths were regarded as being due to morphine, though no post-mortem examination was held to determine the exact nature of the lesions present. In the circumstances it must be regarded as doubtful that full responsibility rests on the morphine. Vaughan and Graham state that the use of opiates in acute asthma is contraindicated for two reasons. The first is that since the drug depresses the central nervous system, including the respiratory centre, its administration will increase the patient's difficulty. The second is that morphine is a parasympathicomimetic drug and exerts a slight, though definite, bronchospastic effect. What really needs to be determined is why Vaughan and Graham's patients died; in the absence of this information their *ex cathedra* statement must be accepted with reserve.

HEDLEY DUNCAN WRIGHT.

The science of bacteriology has lost one of its most brilliant exponents in the untimely death, reported recently from England, of Professor Hedley Duncan Wright at the age of fifty-one years. At the time of his death Wright occupied the chair of bacteriology in the University of Liverpool, England. He was an Australian, born in Tasmania, where he graduated in Arts in 1910. He studied medicine at Edinburgh, eventually taking the degrees of Doctor of Medicine and Doctor of Science of the University of Edinburgh. He will be remembered by Australians because he was first Bosch Professor of Bacteriology in the University of Sydney, occupying the chair from 1930 to 1934, but chiefly for his personal worth, his insistence on a high standard in everything that he touched, and his candid and searching, but withal helpful and friendly criticism. He will be remembered among those who have shed lustre on medical science.

[1] *The Journal of the American Medical Association*, June 13, 1942.

Abstracts from Medical Literature.

THERAPEUTICS.

Sulphonamides.

A. M. Fishberg (*Journal of the Mount Sinai Hospital, New York*, January-February, 1942) discusses the use of sulphonamides in renal insufficiency. Renal complications such as renal colic, hæmaturia, anuria or obstructive oliguria, may occur during sulphonamide therapy, owing to precipitation of the relatively insoluble acetylated sulphonamides. The author reports the case of a girl, aged thirteen years, who suffered from chronic pyelonephritis associated with anæmia. The patient developed pneumonia. One gramme of sulphathiazole was given four times in thirty-six hours. The blood concentration was 11 milligrammes *per centum* three days later, and was still 6 milligrammes *per centum* nine days after administration of the drug was suspended. The temperature fell to normal on the second day of the illness and there were no ill effects from the drug. This case illustrates the fact that impairment of renal function results in a higher blood level from a given dose and a more prolonged elevation of the sulphonamide level in the blood stream.

Sulphathiazole Emulsion.

D. Ackman and G. Wilson (*The Canadian Medical Association Journal*, March, 1942) describe experiences with an emulsion of sulphathiazole in surgery and gynæcology. A 5% emulsion containing triethanolamine, distilled water, white beeswax and liquid paraffin is applied to abscess cavities which are packed with gauze soaked in the emulsion; burns were covered with similar gauze under a large dry gauze wrapped absorbent. The dressings are left *in situ* for two days or more. If the gauze is properly soaked it is easy to remove without damage to the wound. The emulsion is used only as a supplementary dressing for burns and is not intended to replace eschar treatment for extensive and severe burns of large areas of the body. It is useful for burns of hands, feet, face, neck, axilla and perineum, where cracking and infection are prone to occur. The effects in abscesses and burns are very satisfactory. No other medicament should be used with sulphathiazole in the emulsion, and alcohol particularly should be avoided in conjunction with it as it sometimes causes a severe reaction. In gynæcological surgery the emulsion is used to pack the vagina, two-inch packing gauze being used, instead of acriflavine gauze. The results obtained are thought to be an improvement on those obtained with other techniques. A watch should be kept for toxic effects, but actually the absorption of the drug into the blood is very slight by this method. No toxic effects were observed in a series of 83 cases.

Dangers of the Continuous Inhalation of Oxygen.

J. R. Paine *et alii* (*The Journal of Thoracic Surgery*, December, 1941) point out that the development of the Boothby-Lovelace-Bulbulian (B.L.B.) mask has made it possible to administer high concentrations of oxygen efficiently and economically and that oxygen is being more and more used in therapeutics, so that the condition of "oxygen poisoning" may be seen in the future more frequently than in the past. They have carried out experiments in dogs which show that the prolonged respiration of concentrations of oxygen exceeding 75% causes congestion and hyperæmia of the lungs, spleen, liver and kidneys. The continuous respiration of gaseous mixtures containing 95% to 97% oxygen at a temperature of 70° to 80° F. causes death in dogs in an average time of 39 hours. Hence they advise that the therapeutic administration of any high concentration of oxygen should be interrupted at least several times a day.

Sulphadiazine.

The Council on Pharmacy and Chemistry (*The Journal of the American Medical Association*, February 28, 1942) has described the uses of sulphadiazine. This substance is akin to sulphapyridine. It is a white powder which is effective in treatment of meningococcal and staphylococcal infections, *Escherichia coli*, *Clostridium septicum* and *welchii* infections in mice and gonococcal infections. It is absorbed more slowly than sulphathiazole or sulphanilamide and is excreted more slowly; five days or more elapse before it is all eliminated. It is easier to maintain adequate concentrations in the blood with sulphadiazine than with sulphapyridine or sulphathiazole. Its toxic effects are less than those of any other drug in this series. The dose is 0·1 gramme per kilogram initially, followed by 1·0 gramme every four hours until the patient's temperature has been normal for 72 hours in pneumonia, or until definite improvement has occurred. Intravenously 0·1 gramme per kilogram of the sodium salt in 5% solution in sterile distilled water was the initial dose and was followed by 1·0 gramme given orally every four hours.

Diethylstilbœstrol.

J. W. Finch (*The Journal of the American Medical Association*, May 30, 1942) has dealt with nausea and vomiting following administration of diethylstilbœstrol. This drug was studied in 95 cases. It was found that patients who suffered from nausea and vomiting during pregnancy had the same symptoms after this drug. In nauseated pregnant women one milligramme of enteric coated tablets of diethylstilbœstrol caused vomiting in 60% of cases. In the treatment of twenty women who had not suffered from nausea and vomiting during pregnancy, three to eight milligrammes of the drug given by mouth daily were not sufficient to cause any symptoms. Young girls of from two to eight years and women of sixty-five to seventy-eight years of age had no symptoms after doses which varied according to age up to five milligrammes daily. Twenty-two lactating women were given three to five milligrammes of the drug daily without ill effect. It is suggested that the nausea and vomiting of early pregnancy are due to an allergic reaction of the patient to the secretion of her own gravid *corpus luteum*. Injection of this luteal hormone intradermally in the patient with nausea of pregnancy produces a typical allergic hive with surrounding erythema. In pregnant women with no nausea it produces no reaction. The same types of reaction were obtained in patients who were nauseated or not, after ingesting diethylstilbœstrol. It is said that nausea and vomiting of pregnancy in the early stages can be cured by giving desensitizing doses of *corpus luteum*. Hence an endeavour was made to desensitize patients to diethylstilbœstrol by giving the drug either intramuscularly or subcutaneously 0·05 milligramme every third day, increasing by 0·05 to 0·10 milligramme at each dose until 1·0 milligramme was reached without reaction. Then the patient returned to enteric coated tablets, 0·05 to 1·0 milligramme daily, and this dose was usually enough to produce therapeutic effects. Oral desensitization was carried out by giving 0·1 milligramme daily for five days, increasing by 0·05 to 0·15 every five or six days until the therapeutic dose was reached. In some cases it was necessary to drop the dose back slightly when reactions were noted. In every case the drug was well tolerated after this desensitization. It is suggested that 0·28 milligramme daily is a sufficient commencing dose of diethylstilbœstrol.

Insulin.

C. C. Bailey and A. Marble (*The Journal of the American Medical Association*, February 28, 1942) discuss the action of histone zinc insulin, globin zinc insulin and clear protamine zinc insulin. The turbid protamine zinc insulin at present used is effective, but has certain disadvantages. Histone insulin is prepared by adding to insulin the simple protein histone, derived from the thymus. It has a prolonged action. One dose given before breakfast begins to act within two hours and continues to act throughout twenty-four hours. There are transient rises in the blood sugar level during the day, but this insulin has much the same action as turbid protamine zinc insulin except that it begins to act much earlier and causes fewer hypoglycæmic reactions. Its only disadvantage is that it tends to clump and to adhere to the neck of the phial. Globin zinc insulin is a long-acting insulin which has less initial effect (in the first two hours) than histone zinc insulin, and a slightly less prolonged action than turbid protamine zinc insulin. It tends to cause hypoglycæmia between 2 and 5 o'clock p.m., and for this reason it is advisable to give carbohydrate in the mid-afternoon. It is best not to give carbohydrate at bedtime with this form of insulin, in order to avoid hyperglycæmia at night. With histone zinc insulin on the other hand it is advisable to give a feed at bedtime, as with turbid protamine zinc insulin. Clear protamine zinc insulin is long acting, lasting about eighteen to twenty-four hours, but it is less effective in controlling the blood sugar than other forms of insulin, and is more likely to give rise to hypoglycæmic reactions. The authors investigated a series of diabetic patients in their reaction to the insulin mentioned above, and they conclude that ordinary insulin for its rapid effect and turbid protamine zinc insulin for its prolonged effect, are at present the most satisfactory forms of insulin for general use.

NEUROLOGY AND PSYCHIATRY.

Traumatic Subdural Effusions.

A. A. MCCONNELL (*Journal of Neurology and Psychiatry*, July and October, 1941) presents twenty-one cases characterized by traumatic subdural effusions under four groups: (i) patients whose condition was deteriorating, usually within forty-eight hours of the accident; (ii) those who were in the process of recovery from definite cerebral contusion, but in whom full recovery seemed to have become checked; (iii) those suffering from headache, dizziness and vague symptoms of nervous instability dating from a head injury; and (iv) patients in whom headache and occasionally some definite nervous symptom, constant for the individual, started some time after a head injury. A subdural effusion was found in nine out of twenty-five cases of acute head injury. In cases in which the acute stage had passed a subdural effusion was found in twenty-three out of thirty-eight cases. This type of effusion constituted a passive, space-occupying lesion which retarded recovery.

Massive Dose Testosterone Therapy in Male Involutional Psychosis.

AWARE that endocrine therapy had failed in attempts hitherto made to cure involutional male psychotics, Mark Ziefert (*The Psychiatric Quarterly*, April, 1942) undertook to investigate the effect of massive doses of testosterone. Patients selected for treatment were those suffering from involutional melancholia who for a variety of reasons were regarded as unsuitable for shock treatment. A course of treatment was planned so that 1,300 milligrammes of testosterone propionate were given to each patient over a period of forty days. Neither priapism nor other harmful effects were noticed. Five case histories are presented from which it is seen that, while convulsion therapy is the method of choice for the treatment of involutional melancholia in the male, massive doses of the male sex hormone are associated with remission or partial remission in cases in which convulsion treatment may be contraindicated.

Visual Disorientation with Special Reference to Lesions of the Right Cerebral Hemisphere.

THREE cases are reported by W. Russell Brain (*Brain*, Volume LXIV, Number 4, 1941) of visual disorientation limited to homonymous half-fields, in one case on the right and two on the left side. The writer also discusses the nature and classification of visual disorientation, which he claims results from a lesion of the opposite parietal lobe and is not due to a defect of visual acuity. Visual disorientation is considered in relation to the dominance of one or other cerebral hemisphere. Three cases are reported of massive lesion of the right parietal lobe; and two cases of apraxia for dressing are described and the relation of this symptom to disorder of the body scheme is discussed. Visual disorientation involves more than the inability to orientate oneself by means of vision. Damage to the central process of space-perception on the visual side deranges the whole basis of orientation.

Protracted Insulin Shock.

OTTO BILLIG AND D. J. SULLIVAN (*The Psychiatric Quarterly*, July, 1942) present their findings in twenty-five cases of protracted insulin shock. They claim that in certain cases benefit was derived from this method and that in their series there was neither fatality nor permanent clinical damage. The use of this modification of the ordinary insulin therapy is indicated, they believe, in schizophrenic cases which have shown an unsatisfactory response to previous forms of treatment. They claim improvement in 75% of cases; and note that a number of these cases were resistant to previous shock attempts. They instituted the administration of thiamin hydrochloride and "Novaldine" on theoretical grounds and believed themselves justified by clinical experience. The protracted shocks lasted from three and a half up to fifteen hours. Transient complications were noted.

Amphetamine-Barbiturate Therapy in Psychiatric Conditions.

EUGENE DAVIDOFF AND GERALD L. GOODSTONE (*The Psychiatric Quarterly*, July, 1942) discuss the use of amphetamine sulphate and "Sodium Amytal" used in combination in the treatment of psychiatric disorders. The former drug is usually given intravenously and the latter orally; but various modifications may be made according to the individual requirements of the patients. The authors claim that patients with manic-depressive conditions respond well, the duration of the illness being markedly diminished. Of the patients with incipient schizophrenia 60% showed improvement; they became more amenable and adaptable to hospital routine. The treatment can be used in conjunction with sub-shock doses of insulin. In toxic-infective psychoses and alcoholism benefit is often marked; and the treatment may be modified for use in mild cases.

Early Symptoms of Aphasia with Brain Tumours.

MARK KANZER (*The Journal of Nervous and Mental Disease*, June, 1942) reviews the literature on amnesic aphasia and presents four cases of his own. He considers the initial symptoms of brain-tumour aphasia are likely to take the form of difficulty in word finding; but admits that fundamental problems underlying the subject remain unsolved. He thinks there is clinical evidence that two regions in the brain are involved—the area of Broca and the zone adjacent to the sensory centre for sound in the temporal lobe of the dominant cerebral hemisphere. He notes the behaviour of aphasic patients, believing they show a definite psychopathology, use circumlocutions and other devices to conceal their shortcomings of speech, and resemble the inhibited anxiety neurotic.

Hormonal Influence upon "Puerperal Psychosis" and Neurotic Conditions.

A PATIENT suffering from "puerperal psychosis" who showed premenstrual exacerbation of symptoms, but whose symptoms decreased when menstruation commenced, is discussed by Alfred Blumberg and Otto Billig (*The Psychiatric Quarterly*, July, 1942). They believe this to be due to a disturbed endocrine, probably progesterone, balance. The patient whose symptoms were schizophrenic responded to insulin therapy, but relapsed in the premenstrual phase. She was given progesterone and appeared to recover. The authors note that what they term premenstrual neurotic tension in other patients disappeared after administration of progesterone.

The Catatonic Pupil.

THE catatonic pupil, first described in 1907, is, according to Alexander Levine and Paul Schilder (*The Journal of Nervous and Mental Disease*, July, 1942), a fairly frequent finding among psychiatric patients. It is not characteristic of schizophrenia. It is marked by inequality in size and inconstancy in reaction, from sluggishness to complete abolition of the light reflex. The writers advance the theory that the catatonic pupil is due to some imbalance of the sympathetic-parasympathetic system. The same observers studied the pupillary changes occurring after the intravenous administration of erythroidin, in cases of nitrogen anoxæmia, and after the instillation of eserine, atropine, cocaine, acetylcholine and mecholyl chloride in various strengths.

Deterioration of Patients with Organic Epilepsy.

IN dealing with the mental deterioration shown by patients suffering from organic epilepsy, Alex. J. Arieff and G. K. Yacorzynski (*The Journal of Nervous and Mental Disease*, July, 1942) refer to a previous paper in which they showed that patients suffering from idiopathic epilepsy do not deteriorate so greatly even when treated with bromide. The patients with organic epilepsy were given tests by the Stanford-Binet method at intervals of from one to nine years; 11% showed a significant increase in their intelligence quotients; 37% showed deterioration. The scores at the beginning of the illness were lower than those of a group of patients suffering from idiopathic epilepsy; and the authors claim that there is no difference in regard to the degree of deterioration associated with different organic epilepsies. The epilepsy of the organic group arose from cerebral trauma, inflammatory disease, cerebral tumour, cardio-vascular disease and chronic alcoholism.

Anancastic Depressions.

IN his discussion of anancastic depressions, Ernest G. Lion (*The Journal of Nervous and Mental Disease*, June, 1942) does not claim to be describing a new psychiatric entity; but he believes that certain types of the depressive psychosis have symptoms in common. He bases his findings on sixteen cases in which obsessive-compulsive symptoms developed during the depressive phase. Two cases are reported in detail. The personality displayed prior to the illness was that of a rigid, anancastic individual: people who were markedly superstitious, overscrupulous, orderly and excessively methodical. The obsession was generally aggressive—fear of killing or wounding, inclination to excessive hand washing *et cetera*. The treatment is that of depression generally and it was found that as the depression disappeared the obsessive-compulsive features also commenced to fade.

British Medical Association News.

SCIENTIFIC.

A meeting of the South Australian Branch of the British Medical Association was held on July 30, 1942, at the Verco Lecture Theatre, Institute of Medical and Veterinary Science, Frome Road, Adelaide, Dr. R. J. Verco, the President, in the chair.

Pulmonary Tuberculosis.

Dr. Darcy Cowan read a paper entitled "Pulmonary Tuberculosis: The Adelaide 'Health Survey'" (see page 353).

Squadron-Leader R. L. T. Grant said that any paper from Dr. Cowan was delivered in such a style as to sow the seeds of discussion. He agreed with most of the views put forward, but thought that Dr. Cowan had been a little hard on the radiologists. In Squadron-Leader Grant's experience X-ray findings in children were helpful if they were considered in conjunction with the results of clinical examination. He agreed that sinus infection was a common cause of trouble in children; but he did not agree that X-ray examination of the lungs usually revealed no abnormality, because it frequently happened that the radiologists reported that the film revealed increased basal markings suggesting possible infection of the upper air passages. Squadron-Leader Grant thought that criticism of any scheme, for example, an X-ray survey, should be constructive. He thought that such a scheme would be of much greater value if two points were given due consideration. They were (i) that it was of great importance to have a Mantoux test carried out in every case, and (ii) that only those who reacted to the Mantoux test needed to be radiologically examined. With regard to the Mantoux test, he said the younger the child exhibiting a positive reaction, the more likely it was that the infection had occurred in that child's household. Therefore when a tuberculous child was found, a search should be made for the person, usually an adult, who had been the source of infection. Usually, once infection occurred in children, it was apt to increase more and more. An absence of abnormal shadows in X-ray films of children infected with tuberculosis was even more common than was the case with adults. The objection raised by some to the general use of the Mantoux test—that the public would not support the scheme because of the use of a hypodermic needle—could be obviated by tuberculin patch testing. Squadron-Leader Grant thought that that method should be adopted. He considered that no great weight need be applied to the argument that routine X-ray examination would disclose other abnormalities, such as congenital lesions, rheumatic heart disease *et cetera*, because those conditions, if they were of any importance, could readily be discovered by other means. He pointed out that a child that looked well was not necessarily free from tuberculosis. He said that fat healthy-looking babies were sometimes found to react to the Mantoux test, and that they constituted quite an appreciable percentage of those children who suffered from tuberculous meningitis.

Colonel A. R. Southwood emphasized the importance to the community of early diagnosis of pulmonary tuberculosis. He pointed out that radiology had been a most important factor in the elucidation of pathological conditions of the chest, and he said that store should be set on any minor changes disclosed thereby. He thought that the medical profession should assist in surveys, because the results would be useful for comparison with research work in other places. He emphasized the necessity of limiting their attentions to older children, especially those around the ages of sixteen and seventeen years.

Dr. H. A. McCoy said that the only phase of the discussion on the subject into which a radiologist might enter was from the X-ray point of view, and that was necessarily a limited field. The problem of making a final diagnosis in pulmonary tuberculosis might safely be left in the hands of the physician; he had access to the findings of the ancillary services, of which radiology was only one. The best assessment of radiological evidence was obtained by close cooperation between physician and radiologist. That might be attained by personal discussion between the two, which was the common practice whenever possible. Further, the X-ray findings in no case were complete on one examination; this fact had been exemplified in several of the cases quoted by Dr. Cowan. Progress films were taken as a general rule in all institutions were active tuberculosis was treated, and even in many cases when the lesions had apparently healed. The correct evaluaton of activity of the lesion in pulmonary tuberculosis required the closest cooperation between physician and radiologist, just as surely as did the progress of a peptic ulcer which was being medically treated. It was generally accepted that the incidence of tuberculous lung lesions associated with characteristic X-ray evidence was predominant among young adults; but it was equally certain that active pulmonary tuberculosis occurred in the aged and in the very young. Dr. McCoy submitted that the disease was always recognizable radiologically in the aged and was sometimes detected in the child. He recalled a girl, aged six years, the child of a tuberculous father, who had suffered from an illness which was diagnosed by a children's physician as pulmonary tuberculosis; the skiagram of her lungs revealed shadows in all respects comparable to those seen in some types of adult tuberculosis. The child recovered from the illness, and the lung opacities gradually contracted and were eventually replaced by areas of stippled calcification. Such cases among children, although uncommon, were not rarities. Dr. McCoy went on to say that the radiological recognition of primary pulmonary lesions in the young child was, however, frequently missed; he quoted the two following passages from "Text Book of X Ray Diagnosis by British Authors", Volume I, to indicate that it was the duty of radiologists to look for lesions which might be tuberculous in the lungs of children of all ages and to report findings to the physician in charge of the case:

> There is typically an enlargement of hilar glands often massive, which dominates the picture. Often the inflammatory reaction around the primary focus or near the hilum is also massive, producing a widespread shadow—This reaction in the glands is typical in hitherto un-infected individuals and occurs almost exclusively in young children.
>
> Occasionally in childhood, lesions of the adult type can be found. The early apical lesion is relatively rarely encountered in very young children, but as the age of puberty is neared, apical lesions of the adult type become more frequent—Chronic tuberculosis at school age infects the upper lobe almost invariably.

Dr. McCoy then said that the outstanding experiment in Australia in tuberculosis case-finding by X-ray examination had been inaugurated by the Department of the Army. Findings had been published, and they spoke for themselves. The miniature 35-millimetre film method had been employed, and the capacity of the method to deal with large numbers of subjects in a short time had been proved. A percentage of error had been noted; but that appeared to have been kept within reasonable limits, even when allowance was made for the relatively crude technique employed in the early stages. That rapid strides in the improvement of technique had taken place was undeniable, and it was interesting to note that the method had stood the test of difficult technical problems in relation to the size of the subject examined. The days when a recruit was referred for a large film on account of overweight had passed.

Dr. McCoy considered that the practice of having miniature films viewed by a committee consisting of at least one radiologist and one physician was deserving of special mention. The work of viewing a large number of films in succession was arduous, and the margin of error due to personal factors and fatigue was obviously reduced when more than one pair of eyes was employed. The principle of having a viewing committee had been strongly advocated by the President of the Faculty of Radiology in England, and it had been used with advantage in the Australian centres where miniature films were reported on for the Services. The miniature X-ray test was employed by the Army as a sieve, and the final classification and diagnosis were left to a "chest board", which had facilities including a complete X-ray service at its disposal.

Dr. McCoy then said that Dr. Cowan had referred to the use of radiology in the investigation of nurses at the Royal Adelaide Hospital; he had given accounts of cases illustrating the contraction of a primary tuberculous infection during the period of training, and he had shown the relation between the development of a positive reaction to the Mantoux test and subsequent radiological findings. Most of these X-ray findings in the chest had been negative; but a few tuberculous foci had been found. Dr. McCoy asked Dr. Cowan whether he could inform him of the period during which these primary foci in the lungs were likely to remain of sufficient size to cast a radiological shadow. Dr. McCoy submitted that during the period of three months which elapsed between a subject's failure to respond to the Mantoux test and the subsequent development of a reaction to the test, a primary lesion might have developed and

resolved, and yet not have had time to calcify. Moreover, many foci were small and might be obscured by structures outside the lungs, in the case of either adult or child, and in any case, tuberculous infection was not always contracted through the respiratory tract. Dr. McCoy had already referred to the problem of radiologically detecting tuberculosis in the lungs of children. That a lesion of an adult type could occur was in his opinion undeniable. He submitted that an intriguing problem existed, in the estimating of the frequency with which primary foci might be demonstrated. That in primary infections demonstrable X-ray signs might be found was apparent from the literature. Dr. McCoy stressed again the fact that the final diagnosis rested with the physician, and that the radiological evidence, in common with other relative findings, had to fit into the complete clinical picture. He suggested with respect that radiology had a place in the finding of cases of pulmonary tuberculosis among children. As in adults, a preliminary survey of large numbers could be best achieved in practice by the miniature method of radiography. It was known that technical results varied in quality in inverse proportion to the size of the subject, and Dr. McCoy held without hesitation that the best technical results might be obtained among children.

DR. H. K. FRY considered that Dr. Cowan's paper was polemical. He said that radiology had a place in case-finding methods. The National Association for the Prevention of Tuberculosis, in London, had recently issued a memorandum which appealed to doctors, workers, employers and local authorities for the increased use of radiological methods to discover tuberculosis at the earliest possible moment. The Adelaide Local Board of Health had called its survey a "Health Survey", because the Board wished to emphasize the desirability of everyone's having a medical "overhaul" once a year to ensure that he was healthy, the radiological examination of the chest being a part of such an examination. The public had been and was being repeatedly informed that the finding of an abnormality in the X-ray film did not mean that the subject was suffering from tuberculosis, but merely that it was particularly important for him to be thoroughly examined. The diagnosis in regard to reported abnormalities was left to the private physician or the chest clinic. The Health Survey was not a tuberculosis survey, though the finding of cases of pulmonary tuberculosis was its most important function. The results to date had proved undeniably that the Health Survey was justifying itself. The Government and the Adelaide Local Board of Health had not "selected" a group of children for survey, as Dr. Cowan had affirmed. The grant was made after it had been found, during the ordinary work of the survey, that so many parents wished to have their children radiologically examined that school organization was necessary to meet the demand. This could be done only on a free-for-all basis. The survey constituted an interesting piece of research work. This was the first grant by the State Government for research regarding child health. If the British Medical Association could do nothing but anathematize this first effort, the Government would not be encouraged to support other pieces of research.

Dr. Fry then showed on the screen graphs giving the percentage of abnormalities reported among subjects arranged in age and sex groups for the first 10,000 and the first 15,000 attendances at the survey. The graphs were practically identical for the two series. Dr. Fry pointed out that that fact indicated that the radiologists' reporting was not so haphazard as Dr. Cowan apparently thought. The small amount of pulmonary tuberculosis occurring before puberty, the close correspondence of increasing percentages of probable or possible pulmonary tuberculosis in male and female age groups up to that of forty to forty-five years, and the progressive increase in such percentages among males beyond this age, in the absence of such an increase among females, strongly suggested some association of active pulmonary tuberculosis with active gonadal function.

Dr. Cowan, in reply, said that nothing he had heard that night had altered in the slightest degree his opinion concerning the unsoundness of the plan instituted by the civic authorities for a mass miniature radiographic survey of school children. He had no quarrel with radiologists in general. No one appreciated more than he did the value of radiology in the diagnosis of respiratory disease. But he also knew something of its limitations, and it was to those limitations he had wished to draw attention. He realized that in the present survey some abnormalities would be found. He was not concerned about that. Such cases would be investigated further. Those subjects who had significant lesions would be put in the way of treatment; those whose lesions were not of particular importance would be reassured, and little harm would be done. But he was concerned at what lesions would be missed, both tuberculous and non-tuberculous, and he was afraid that harm would be done in this way. He asked anyone who might feel hurt to remember that there was no personal animus in his remarks; but he hoped also that they would remember, before embarking on any further efforts, that there was such a body as the British Medical Association, which he felt sure was willing and able to give any expert assistance and advice that might be asked for. In conclusion, Dr. Cowan quoted some lines he had recently read:

Stand up to be seen.
Speak up to be heard.
Shut up to be appreciated.

National Emergency Measures.

NATIONAL SECURITY (VENEREAL DISEASES AND CONTRACEPTIVES) REGULATIONS.

THE following National Security (Venereal Diseases and Contraceptives) Regulations were issued on September 1, 1942, under the *National Security Act*, 1939-1940.

1. These Regulations may be cited as the National Security (Venereal Diseases and Contraceptives) Regulations.

2. These Regulations shall be administered by the Minister of State for Health.

3. In these Regulations, unless the contrary intention appears, "Chief Health Officer" means—

(*a*) in relation to the State of New South Wales—the Commissioner appointed under the *Venereal Diseases Act*, 1918, of that State;
(*b*) in relation to the State of Victoria—the Chief Health Officer;
(*c*) in relation to the State of Queensland—the Director-general of Health and Medical Services;
(*d*) in relation to the State of South Australia—the chairman of the Central Board constituted under the *Health Act*, 1935-1936, of that State;
(*e*) in relation to the State of Western Australia—the Commissioner of Public Health; and
(*f*) in relation to the State of Tasmania—the Director of Public Health;

and includes any medical officer for the time being performing the duties of any such officer; "venereal disease" includes gonorrhœa, syphilis, soft chancre and venereal granuloma.

4. If the Chief Health Officer is satisfied that there are reasonable grounds for suspecting that any person is suffering from venereal disease, he may, by order in writing, require the person so suspected to present himself for examination at such time and place as is specified by him in the order, and such person shall present himself for examination accordingly.

5.—(1.) If any such person fails to present himself for examination at the time and place specified in the order, the Chief or other Commissioner of Police of the State concerned may, when authorized to do by the Chief Health Officer, issue a warrant authorizing any constable named therein, with such assistants as he thinks necessary, to apprehend the suspected person and bring him for examination by a legally qualified medical practitioner at such time and place as is directed in writing by the Chief Health Officer, and the suspected person shall submit himself for examination accordingly.

(2.) A warrant issued under this regulation for the apprehension of a suspected person who is a woman shall, if possible, be directed to a constable who is a woman.

6. If any suspected person refuses to submit himself for examination as and when required, or if, on examination, he is found to be suffering from venereal disease, he may be detained in a hospital or other suitable place approved by the Chief Health Officer for such period as the Chief Health Officer from time to time directs, and such person shall remain in such hospital or place until his discharge has been approved by the Chief Health Officer.

7. Every warrant or order issued under these Regulations shall have effect according to its tenor, and all constables and all governing authorities and officers of any hospital or place in which any person is detained under these Regula-

tions shall do all things necessary to carry into effect the provisions of these Regulations.

8. Notwithstanding anything contained in any law of the State, the Chief Health Officer may notify any medical officer of the Naval or Military Forces or of the Air Force or of the Armed Forces of His Majesty, or of any power which is allied or associated with His Majesty in any war in which His Majesty is engaged, of the name of any member of those Forces in Australia who is suffering from venereal disease.

9. When any person under sixteen years of age is or becomes liable under these Regulations to do or to submit to any act, matter or thing, any parent or guardian of such person who knows that such person is so liable shall exercise his authority and use his best endeavours to compel or induce such person to do or submit to such act, matter or thing and, on failure of such person so to do or submit, shall report the fact to the Chief Health Officer.

10. No action shall lie against the Commonwealth, any State, Chief Health Officer, Chief or other Commissioner of Police, constable or other person acting in pursuance of these Regulations in respect of any apprehension and detention in pursuance of these Regulations, but, if the Governor-General is satisfied that any person has been apprehended or detained without reasonable cause, he may award such compensation in respect thereof as he considers reasonable.

11. All Courts shall take judicial notice of the official signature of any person who holds or has held the office of Chief Health Officer.

12.—(1.) A person shall not publish any statement, whether by way of advertisement or otherwise, to promote the sale of any article as a medicine, instrument or appliance for the alleviation or cure of any venereal disease, or disease affecting the generative organs or functions, or of sexual impotence, or of any complaint or infirmity arising from or relating to sexual intercourse, or of female or menstrual irregularities, or for terminating pregnancy or influencing the course of pregnancy, or for preventing conception.

(2.) Any person who—

(a) affixes or inscribes any statement on any thing whatsoever so as to be visible to persons being in or passing along any street, road, highway, pathway, public place, or public conveyance;
(b) delivers or offers, or exhibits any statement to any person being in or passing along any street, road, highway, pathway, public place, or public conveyance;
(c) throws any statement into or upon any street, road, highway, pathway, public place or public conveyance, or into the area, yard, garden or enclosure of any house;
(d) exhibits any statement to public view in any house, shop or place;
(e) prints or publishes any statement in any newspaper;
(f) sells, offers for sale, shows, or sends by post, any statement to any person; or
(g) broadcasts by means of wireless telegraphy any statement, shall be deemed to have published that statement.

(3.) For the purposes of this regulation, the word "statement" includes any document, book, or paper containing any statement.

(4.) Nothing in this regulation shall apply to any books, documents or papers published in good faith for the advancement of medical or surgical science, or to any advertisement, notice or recommendation published by the authority of the Director-General of Health, or to any publication sent only to medical practitioners or to registered pharmacists for the purposes of their business.

Correspondence.

OBSTETRICS AND OTHER MEDICAL SERVICES.

Sir: It is generally agreed that bearing a child, and subsequently caring for it till maturity, is physiologically and psychologically the most important function of a woman's life, and it is certainly of the greatest importance to the race. So valuable is this reproductive process that one would expect the community to ensure that during pregnancy, parturition and lactation every woman had especial care and protection from environmental hardships, and skilled and experienced medical attention, so as to obtain the most healthy mother and baby and reduce fœtal and maternal deaths to a minimum. In short, one would expect the community to place a high value on maternity service and to demand that it be efficient.

An indication of how the exacting work of midwifery is valued in relation to some other medical services is shown in the issue of The Medical Journal of Australia of September 12, 1942. In the schedule of fees (for the Emergency Civil Medical Practitioner Service), there is set out the monetary value of various medical services. Among them is: "10. Midwifery, to include ordinary ante-natal care and post-natal attendance to the tenth day—£5 5s." Also is found: "17. In procedures not specified . . . the charges shall be the same as . . . for . . . procedures of approximately equal magnitude."

A very just principle this, and one that suggests a further study of the schedule, to see what services have been considered by the framer (or framers) of the schedule, to be of "approximately equal magnitude" to "Midwifery, to include ordinary ante-natal care and post-natal attendance to the tenth day". These are found to be: a fracture of either the navicular, a tarsal bone, the ulna, fibula, clavicle, scapula, or patella; dislocation of the shoulder; amputation of two or more digits; suture of one tendon; tonsillectomy (children); circumcision (adult).

Surely a sense of proportion is wanting. Is it seriously contended that the arduous task of removing an adult prepuce (or, indeed, any of the above procedures) is of approximately equal magnitude to the efficient care of a woman during pregnancy and parturition?

Admittedly this schedule is for emergency purposes; but it closely resembles Schedule E of the *Workmen's Compensation Act* Agreement (which, of course, does not include midwifery—yet) and, for the most part, follows usually accepted standards of fees. Consequently, and this is really the important point, it indicates a prevailing opinion of the value of midwifery service. This same low value is placed on obstetrics, by the fee chargeable for such work in friendly society agreements.

A fundamental necessity to improve fœtal and maternal mortality and morbidity is to see that every woman receives the best possible individual medical care and treatment throughout her pregnancy and confinement. It must be conceded that the time, skill and judgement required to provide this deserve adequate remuneration.

There must be planning (by the medical, rather than the political, profession) to achieve these objects, planning that will fit into the framework of whatever the medical new order is to be, and planning embodying the opinions of those who actively practise obstetrics and gynæcology, either exclusively as specialists or as part of general practice. An example of the lack of these opinions is seen in the Plan for a National Medical Service, conceived by the National Health and Medical Research Council, in which the time-honoured and obviously beneficial symbiosis of obstetrics and gynæcology is destroyed, by handing gynæcology to the surgeons. The essential interlocking of obstetrics and gynæcology is recognized throughout the world, and any separation of them is artificial and a retrograde step.

In England, despite the extreme stresses of war, the Royal College of Obstetricians and Gynæcologists has given attention to the principles of a national maternity service; its delegates have conferred with delegates from the Colleges of Physicians and Surgeons regarding matters concerning consultants, and its representatives sit with the Medical Planning Commission, which is considering the future of medical practice.

In other words, whenever the present and future plans for medicine are being discussed, obstetricians and gynæcologists as a united body are contributing their ideas and opinions. It should be obvious that if obstetrics and gynæcology in Australia are to develop along the lines most beneficial to our national welfare we must follow the example of our British colleagues.

Yours, etc.,

John Chesterman.

135, Macquarie Street,
Sydney,
September 20, 1942.

THE NORMAL HEART AND CONDITIONS SIMULATING CARDIAC DISEASE.

Sir: The importance of the subject of E. H. Stokes's paper (The Medical Journal of Australia, September 19, 1942) cannot be stressed too much, particularly in regard to its main purpose to draw attention to conditions which simulate

heart disorders. Every practitioner has met with cases in which fears have been confirmed by what I term a thoughtless reference to "a leaky valve" or "murmur" or even "high blood pressure", as if the patients wanted to hear such verdicts, given without careful investigations. This is just slow and cruel torture. I have had personal experience of one remarkable simulation not mentioned which I was told indicated coronary insufficiency, "not a lesion, my boy", and so I was put to bed until I realized my cardiac pain was due to too much thyreoid. I now go back to the opening paragraph of the paper and quote: "Of all the ailments which may blow out life's little candle, heart disease is the chief." I would qualify this by asserting that a great many subjects of heart disease die of other causes such as the notorious terminal infections in which circulatory failure is indirectly a cause. The heart is a wonderful organ and its left auricle holds the candle being the first to live and the last to die, flickering. Another statement I must controvert more definitely. Speaking of the pulse, Stokes says: "By volume is understood the apparent size or amplitude of the pulse wave as it passes the palpating fingers." In refutation I will quote from a paper by Lister, "Effects of the Position of a Part on the Circulation through It" (*British Medical Journal*, 1879, Volume I, page 923).

> The arteries, in any given state of contraction of their transversely arranged muscular fibres, are by no means disposed to yield readily in the lateral direction, to increase of pressure from within. This is evident from the fact that they are not increased in diameter by the successive strokes of the powerful muscular pump, the heart. The surgeon, when tying a large arterial trunk in its continuity, does not find, on clearing the vessel of its sheath with the point of his knife, that he is dealing with a body that swells at every pulse, but with one of unvarying dimensions. And in the experiment on the metacarpal artery of the horse above referred to, no changes in the transverse measurement were noticed so long as the limb was maintained in any one position. If any increase do occur in the diameter of an artery in systole, it is inappreciable by ordinary methods of measurement.

I will not comment further on this characteristically simple statement of Lister's except to say I have repeated his experiments on the carotid of man and horses and confirmed them, and if physiologists say I imagine there is no increase, I reply that they imagine there is and that too far and such a false belief is hampering our understanding of the physics of the cardio-vascular system.

Yours, etc.,

A. C. F. Halford.

Brisbane,
September 22, 1942.

FOCAL INFECTION.

Sir: Dr. Frank Trinca's interesting and valuable letter suggests that he was impelled to write through his fears that much curable disease will remain uncured if practitioners fail to recognize the part played by focal infections. The same fear, based on actual experiences, impelled me to write my first letter, and further experiences now impel me to write a second.

Even since writing my first, I have seen several patients whose ill health has persisted through the failure of practitioners (including general practitioners, orthopædic surgeons and a "rheumatologist") to recognize the part being played by grossly infected tonsils in middle-aged and elderly patients.

The practical points I would submit are as follows:

1. Every practitioner, be he physician, surgeon or "orthopod", should be well practised in making a routine complete search of his patient for those factors which can cause general tissue spoiling. If the practitioner is not accustomed to do this, what on earth was the point of that long training in the basic sciences and in general medicine which the practitioner underwent before embarking on his specialty? Surely the end of all this training should not be, that he parcels his unfortunate patient out to ten specialists in order to achieve a simple thorough clinical overhaul, or else he does not achieve one at all.

2. The technique of examining the tonsil is quite unknown to a large number of practitioners, including general practitioners, "orthopods", and even "rheumatologists". Infected tonsils are not recognized as such, because they do not appear as great hypertrophied masses, nor cause complaint of sore throats. It is not sufficient to depress the tongue, glance at the throat, and then pronounce the tonsils normal or absent.

The technique is as follows. Both hands of the examiner should be free, and it is therefore necessary to use a good forehead light or head-mirror, and not a torch. With one spatula the tongue is depressed, while the patient is encouraged to breath through the mouth. Then, the end of a second tongue depressor, held with the edge vertical, is pressed against the anterior pillar and slid from above downwards, pressure being maintained. Many tonsils which were "absent" will now come into view, many which looked "small and normal" will now emerge from their hidden position and appear in their true colour and texture—red, fibrous and œdematous, with a little yellow fluid, often offensive, oozing out from their crypts. When examining the left tonsil the patient's face should be directed towards the examiner's right shoulder, and *vice versa*. This brings the tonsil into the best view, and gives the examiner a chance to "duck" successfully when the patient's pharynx rebels.

Yours, etc.,

V. J. Kinsella.

235, Macquarie Street,
Sydney,
September 24, 1942.

THE RH FACTOR.

Sir: Because we feel that some practitioners are still using the blood of the mother to transfuse infants suffering from *icterus gravis neonatorum*, we wish to stress that the recent discovery of the Rh factor in human blood has shown that the mother is definitely not the donor of choice. To use the mother is only adding coals to the fire which is consuming the infant's red cells, for her blood serum contains the Rh antibody which will destroy more of the baby's cells.

Moreover, the father of an *"icterus gravis"* baby, being Rh+, is not the most suitable donor, and obviously the best donor to choose is an Rh− person. Since we have at present no means of differentiating donors except by the strong anti-Rh serum of some pregnant or parturient women, the best line of action is to use some of the mother's blood relations who (since the mother is Rh−) have more chance of being Rh− than a stranger chosen at random (since 85% of donors are Rh+).

Alternately, should the mother of an *"icterus gravis"* baby need a transfusion, the husband must not be used and very careful cross-matching of prospective donors (again we suggest the mother's relatives) must be undertaken by experienced and unhurried workers. If the woman has no blood relations, a stranger may, of course, be used after careful compatibility tests have been performed.

We propose to publish a further report on this work at a later date.

Yours, etc.,

J. V. Duhig, Director,
Noel R. Henry, Bacteriologist.

Pathology Department,
Brisbane Hospital,
Brisbane.
September 23, 1942.

Naval, Military and Air Force.

APPOINTMENTS.

The undermentioned appointments, changes *et cetera* have been promulgated in the *Commonwealth of Australia Gazette*, Number 264, of October 1, 1942.

Royal Australian Air Force.

Citizen Air Force: Medical Branch.

Leslie Howard Albiston, M.B., B.S. (6799), is appointed to a commission on probation with the rank of Flight Lieutenant (temporary Squadron Leader) for part-time duties with effect from 7th September, 1942.

Flight Lieutenant Ellery Arthur Mulvihill Ryan, M.B., B.S. (5908), is transferred from the Reserve with effect from 10th August, 1942.

The probationary appointments of the following temporary Squadron Leaders are confirmed: B. W. B. Riley (4270), W. T. D. Maxwell (4363).

The probationary appointments of the following Flight Lieutenants are confirmed: C. W. Kingston (3945), D. W. Short (3944), E. C. Swan (3943), W. J. P. Woolcock (3946), G. A. Hodgson (3612), J. J. Connolly (3899), A. A. Crook (3894), W. R. F. Fox (3909), C. L. Gibbons (3898), W. G. Jasper (3897), H. R. Worth (3893), L. Elias (3736), W. A. Hillman (3735), D. F. Buckle (3865), H. C. Taylor (4368), H. E. Cock (4327), R. F. Deakins (4324), J. D. Oddy (4325), K. J. G. Sutherland (4326).

Reserve: Medical Branch.

The following are appointed to commissions on probation with the rank of Flight Lieutenant with effect from the dates indicated: Robert Collin, M.B., B.S. (6787), Charles Rolleston Watson, M.B., B.S. (6788), 20th August, 1942; Francis Esmond Browne, M.B., B.S. (6800), Reginald Edward Wood, M.B., B.S. (6797), Henry George Hiller, M.B., B.S. (6811), John Douglas Whiteside, M.B., B.S. (6812), 6th September, 1942; William Bowie Macdonald, M.B., B.S. (6798), 10th September, 1942.—(Ex. Min. No. 158—Approved 30th September, 1942.)

CASUALTIES.

According to the casualty list received on October 2, 1942, Captain P. Jensen, A.A.M.C., of Mount Morgan, Queensland, has been placed on the "Dangerously Ill" list.

According to the casualty list received on October 12, 1942, Captain Leswyn Oswyn Sheridan Poldevin, A.A.M.C., of Scone, previously reported missing, is now reported prisoner of war.

Post-Graduate Work.

LECTURES IN SYDNEY.

The New South Wales Post-Graduate Committee in Medicine announces that a series of lectures on "Minor Maladies" will be delivered on Monday, October 19, 1942, at 4.30 o'clock p.m. at the Stawell Memorial Hall, Royal Australasian College of Physicians, 145, Macquarie Street, Sydney. The programme is as follows:

"Minor Foot Deformities", Dr. Norman Little.
"Common Skin Affections of the Feet of Soldiers", Sir Norman Paul.
"Acute Strained Back", Dr. John Hoets.
"The Common Cold", Dr. A. W. Holmes à Court.
"Acute Hysteria", Major D. W. H. Arnott.
"Common Dyspepsias", Dr. O. A. A. Diethelm.
Demonstration of the control of foot function, Dr. D. J. Glissan.

This series will terminate the winter session of Monday afternoon lectures; the lectures will be resumed at a later date which will be announced in due course.

Nominations and Elections.

The undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Curtin, Bryan Austin David, M.B., B.S., 1942 (Univ. Sydney), Saint Vincent's Hospital, Darlinghurst.

Thomson, Mary Macdonald, M.B., B.S., 1941 (Univ. Sydney), 4, Hale Road, Mosman.

McDonogh, William Patrick, M.B., B.S., 1942 (Univ. Sydney), 144, Banksia Street, Botany.

Obituary.

BASIL SAMUEL FOULDS.

We regret to announce the death of Dr. Basil Samuel Foulds, which occurred on September 18, 1942, at Sydney.

Medical Appointments.

Dr. Beatrice Alice Warner has been appointed Medical Officer (Venereal Diseases), Department of Health and Home Affairs, Brisbane, in accordance with the provisions of *The Public Service Acts*, 1922 to 1924, and *The Health Acts*, 1937 to 1941, of Queensland.

Diary for the Month.

Oct. 20.—New South Wales Branch, B.M.A.: Ethics Committee.
Oct. 21.—Western Australian Branch, B.M.A.: Branch.
Oct. 22.—New South Wales Branch, B.M.A.: Clinical Meeting.
Oct. 23.—Queensland Branch, B.M.A.: Council.
Oct. 27.—New South Wales Branch, B.M.A.: Medical Politics Committee.
Oct. 29.—New South Wales Branch, B.M.A.: Branch.
Oct. 29.—South Australian Branch, B.M.A.: Branch.
Oct. 30.—Tasmanian Branch, B.M.A.: Council.
Nov. 3.—New South Wales Branch, B.M.A.: Organization and Science Committee.
Nov. 4.—Western Australian Branch, B.M.A.: Council.
Nov. 5.—South Australian Branch, B.M.A.: Council.
Nov. 6.—Queensland Branch, B.M.A.: Branch.
Nov. 10.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
Nov. 10.—Tasmanian Branch, B.M.A.: Branch.

Medical Appointments: Important Notice.

Medical practitioners are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

Manuscripts forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to The Medical Journal of Australia alone, unless the contrary be stated.

All communications should be addressed to the Editor, The Medical Journal of Australia, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, The Medical Journal of Australia, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility unless such a notification is received within one month.

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